TRANSACTIONS

OF THE

AMERICAN SOCIETY OF CIVIL ENGINEERS

INDEX
VOLUME 133
1968

SUBJECT INDEX, PAGE 759
AUTHOR INDEX, PAGE 803

SUBJECT INDEX

ACTIVATED SLUDGE
Nominal Diameter of Floc Related to Oxygen Transfer, James A. Mueller, Karl G. Voelkel, and William C. Boyle, 304

ADHESIVES
Shallow Prestressed Girders for Fresno Underpass, S. H. Studzinski, 577

AERATION
Precipitation of Iron in Aerated Ground Waters, Mriganka M. Ghosh, John T. O'Connor, and R. S. Engelbrecht, 653

AERODYNAMICS
Aerodynamic Stability of H Sections, Daniel Dicker, 174
Gust Loading Factors, Alan G. Davenport, 536
Similitude Problems in Building Aerodynamics, Hans J. Leutheusser and W. Douglas Baines, 630
Vibration Frequencies of the Chesapeake Bay Bridge, A. Hughlett Mason and Dean S. Carder, 337

AERO-SPACE TRANSPORT
Airport Accessibility and Detroit Passengers, Rolla Edward Park, 10
Airport Take-off and Landing Paths, Frederic T. Mavis and Charles F. Peck, Jr., 216
Bayesian Approach to Forecasting Loss of Airline Service, Arthur E. Tiemann, 641
Concrete Pavement Performance at Ten Civil Airports, Martin L. Cawley, 65
Development of Space Launch Facilities, Bradley L. Baker, 41
Economics of Parking Structures at Airports, Paul H. Stafford, 320
Facility Planning for Philadelphia Airport, Arnold W. Thompson, 461
Floating V/STOL Airport Proposed, Edward G. Nawy and Cooper B. Bright, 424
Forecasts for Philadelphia International Airport, Paul H. Stafford, 391
Get Me to the Airport on Time, Roger H. Gilman, 420
Planning the Dallas-Ft. Worth Regional Airport, Walther Prokosch, 394
Runway Traction, Francis J. Rhody, 715
Service Structure Concepts for Post-Saturn Rockets, Merrill E. Crissey, 296
Siting of Manned Lunar Launch Facilities, 647
Soil-Cement Base for a Runway, C. W. Barenfanger, 418
Structural Design of Large Space Chambers, Lewis H. Blakey, 4

AGGREGATES
Grain Size vs Dollars for Drainage Aggregates, Harry R. Cedergren, 608

AIRCRAFT
Airport Take-off and Landing Paths, Frederic T. Mavis and Charles F. Peck, Jr., 216
Floating V/STOL Airport Proposed, Edward G. Nawy and Cooper B. Bright, 424
Precision Alignment Systems, Kale Skutley, 616
Runway Traction, Francis J. Rhody, 715

AIR POLLUTION
Air Research Monitoring Station System, William T. Ingram, Conrad Simon, and James R. McCarroll, 33
Dustfall as a Source of Water Quality Impairment, Richard E. Johnson, August T. Rossano, and Robert O. Sylvester, 723
Progress in Control of Vehicle Emissions, John H. Ludwig, 288
San Francisco's Solid Wastes Crisis, Frank P. Sebastian, 571

AIRPORTS
Airport Accessibility and Detroit Passengers, Rolla Edward Park, 10
Airport Terminal Facilities, American Society of Civil Engineers—Airport Operators Council International Specialty Conference, Houston, Texas, April 10–14, 1967, 331 pp.
Asphalt Paving for a New Airport in Alabama, Reginald Kerlin, 599
Concrete Patching on a Runway, 624
Concrete Pavement Performance at Ten Civil Airports, Martin L. Cawley, 65
Economics of Parking Structures at Airports, Paul H. Stafford, 320
Facility Planning for Philadelphia Airport, Arnold W. Thompson, 461
Floating V/STOL Airport Proposed, Edward G. Nawy and Cooper B. Bright, 424
Forecasts for Philadelphia International Airport, Paul H. Stafford, 391
Get Me to the Airport on Time, Roger H. Gilman, 420
Planning the Dallas-Ft. Worth Regional Airport, Walther Prokosch, 394
Runway Traction, Francis J. Rhody, 715
Soil-Cement Base for a Runway, C. W. Barenfanger, 418

ALABAMA RIVER
Experimental Research on Lock Hydraulic Systems, John P. Davis and Thomas E. Murphy, 712

ALINEMENT
Precision Alignment Systems, Kale Skutley, 616

ALUMINUM
Aluminum Orthotropic Bridge Deck in Pittsburgh, W. M. Rogerson, et al., 621
Longitudinal Stiffeners for Compression Members, Maurice L. Sharp, 445

ANALOGS
Analog Modeling the California Delta System, James A. Harder and John O. Nelson, 702

ANTENNAS
Computer Design of a Tower and Cable System, R. A. Williamson, H. F. Stevenson, and P. W. Van der Pas, 217

AQUIFERS
Analyses of Parameters of an Unconfined Aquifer, George J. Kriz, Verne H. Scott, and Robert H. Burgy, 199

ARCHES
Computer Analysis of Two-Hinged Circular Arches, Robert C. Cornforth and S. Bart Childs, 477
Model Study of Dynamically Loaded Arch Structures, Don R. Denton and William J. Flathau, 669

ARCHITECTURE
Aesthetic Considerations in City Construction, Vernon F. Jorgensen, 644

ARKANSAS RIVER
Pumping Test to Determine Permeability Ratio, Charles I. Mansur and Rudy J. Dietrich, 680

(ASCE) MEMBERSHIP
Admit Civil Engineering Technicians to ASCE?, 546

(ASCE) POLICY
Admit Civil Engineering Technicians to ASCE?, 546

(ASCE) PRESIDENTS
ASCE's Future Is our Business, Richard H. Tatlow, III, 727
The Critical Path of ASCE (Inaugural Address), Richard H. Tatlow, III, 583

(ASCE) PROFESSIONAL ACTIVITIES
The Critical Path of ASCE (Inaugural Address), Richard H. Tatlow, III, 583
Federal Employee-Management Cooperation: E. O. 10988, Leonard T. Crook, 665
Inter-American Program: Past, Present, and Future, Frederick J. McGarry and Charles L. Miller, 604
Professional Training of Engineers, 577
What Does a Member Get Out of ASCE?, William H. Wisely, 436
Worlds of Two Giants, Paul M. Wright, 21

(ASCE) RESEARCH
Progress Report—ASCE Combined Sewer Separation Project, M. B. McPherson, 713

(ASCE) SERVICES TO MEMBERS
What Does a Member Get Out of ASCE? William H. Wisely, 436

(ASCE) TECHNICAL PUBLICATIONS
Reconstructing the ASCE Journals, Charles G. Culver, 287

(ASCE) YOUNGER MEMBERS
How to Publish and Perish, Robert L. Alexander, 332

(ASCE) AWARDS AND PRIZES
Criticism and the Advancement of Building Engineering, Edward Cohen, 350

AUDITORIUMS
Madison Square Garden—Fabrication and Erection of Cable-Supported Roof, J. A. Sterner, 534
Oakland Coliseum Features Cable Supported Roof, 93

BACKWATER
Characteristics of M1 Backwater Curves, Nagar S. Lakshmana Rao and K. Sridharan, 224
Improved Method of Flood Routing, Eugene A. Graves, 379

BARS
Complementary Energy Method for Buckling, Cenap Oran, 574

BEACHES
Abstracts of Papers, Tenth Conference on Coastal Engineering, Coastal Engineering Research Council, Waterways and Harbors Division, ASCE, M. P. O'Brien, Chmn., 642
By-Passing and Back-Passing with Reference to Florida, Per M. Bruun, 146

BEAMS (Structural)
Analysis of a Shear Wall Supported by a Beam, A. T. Hinkley, 614
Analysis of Beams and Plates for Ponding Loads, Ahmed E. Salama and Martin L. Moody, 514
Analysis of Laterally-Loaded Continuous Curved Beams, Muppidi N. Reddy and Jan J. Tuma, 623
Beam on Tensionless Foundation, N. C. Tsai and Russell A. Westmann, 652
Behavior of Splices in Beam-Column Connections, Joseph P. Colaco and Chester P. Siess, 562
Columns and Beams Braced by Diaphragms, Samuel J. Errera, George Pincus, and Gordon P. Fisher, 111
Commentary on Welded Cover-Plated Beams,

BEAMS (Structural) *Continued*
Report of the Subcommittee on Cover Plates, Task Committee on Flexural Members, Structural Division, ASCE, John W. Fisher, Chmn., 594
Designing with Plywood Structural Components, W. D. Page, 636
Direct Analysis of Continuous Beam-Columns, John Dundurs, Seng-Lip Lee, and Peter A. Hampe, 663
Dynamic Influence Lines of Beams and Frames, Fernando Venancio Filho, 444
Economy, Efficiency, and Esthetics in Small Concrete Bridges, Arvid Grant, 432
Finite Beams on Elastic Foundations, Constancio Miranda and Keshavan Nair, 666
Finite Difference Accuracy in Structural Analysis, Nancy Jane Cyrus and Robert E. Fulton, 200
General Method for Beams on Elastic Supports, Ralph R. Mozingo, 472
Inelastic Beams Under Moment Gradient, Maxwell G. Lay and Theodore V. Galambos, 570
Inelastic Response of Beams to Moving Loads, Teoktistos G. Toridis and Robert K. Wen, 31
Plastic Hinging In Reinforced Concrete, Ned H. Burns and Chester P. Siess, 44
Ponding of Rainwater on Flexible Roof Systems, Donald A. Sawyer, 542
Review of Concrete Beams Failing in Shear, Boris Bresler and J. G. MacGregor, 342
Rotational Capacity of Reinforced Concrete Beams, W. Gene Corley, 451
Slope Deflection and Moment Flow Graphs, Chuan C. Feng and Kenneth A. Stead, 478
Stability of Tensile Cracks in Concrete Beams, Nat W. Krahl, Narbey Khachaturian, and Chester P. Siess, 121
Vibration of Nonuniform Simply-Supported Beams, Arthur C. Heidebrecht, 392
Web Crippling Tests on Hybrid Beams, Charles G. Schilling, 237

BEARINGS
Neoprene Elastomer Bearings—Ten Years Experience Proves Their Importance, Robert Lee Pare, 591

BIBLIOGRAPHIES
Bibliography on Thermal Pollution: Report by the Committee on Thermal Pollution, Sanitary Engineering Division, ASCE, H. Bruce Gerber, Chmn., 597
Books on Estimating and Costs, John W. Breed, 359
Civil Engineering in City and Regional Planning, Melville C. Branch and L. M. K. Boelter, 649

BLASTING
Construction of Morrow Point Power Plant and Dam, James D. Seery, 3
Replacing East Canyon Dam While Operations Continue, Merlin D. Copen and Ernest A. Lindholm, 100
Winter Construction of Earthwork and Foundations, Delmar D. Yoakum, 377

BOLTS
Bearing-Type Bolted Hybrid Joints, Robert Kormanik and John W. Fisher, 661
Bibliography on Bolted and Riveted Joints, Prepared by the Task Committee on Structural Connections of the Committee on Metals of the Structural Division, ASCE, and the Research Council on Riveted and Bolted Structural Joints. 658

BORINGS
Record Tunnel Excavation with Boring Machines, D. E. Cannon, 323
Static Penetrometers for Soil Exploration, John H. Schmertmann, 326

BOUNDARY PROJECT
Design and Construction Features: Boundary Project, H. V. Strandberg, 660

BREAKWATERS
Abstracts of Papers, Tenth Conference on Coastal Engineering, Coastal Engineering Research Council, Waterways and Harbors Division, ASCE, M. P. O'Brien, Chmn., 642
Diffraction of Ocean Waves About a Breakwater, Charles T. Morrow, 454

BRIDGES
Aerodynamic Stability of H Sections, Daniel Dicker, 174
Computer-Aided Bridge Design, Gerald M. Sturman, Leland C. Albertson, Jr., C. Allin Cornell, and Jose M. Roesset, 553
Economy, Efficiency, and Esthetics in Small Concrete Bridges, Arvid Grant, 432
Economy of Corrosion-Resistant Steel in Highway Bridges, John M. Hayes and Samuel P. Maggard, 81
Engineered Structures at Expo 67, Hal W. Hunt, 310
Launcher Erects Post-Tensioned Girders in Bolivia, Paul Stergiou, 383
Neoprene Elastomer Bearings—Ten Years Experience, Robert Lee Pare, 591
A Prestressed Lightweight Concrete Bridge Spans 131 ft, George Laszlo, 126
Programming Structural Integrity Maintenance, Lawrence L. Smith, 560
Restoring Salt-Damaged Highway Bridges, Robert J. Walsh, 429
Shallow Prestressed Girders for Fresno Underpass, S. H. Studzinski, 577
Verrazano-Narrows Bridge: Construction of Tower Foundations and Anchorages, Nomer Gray and George H. Decancq, 659
Verrazano-Narrows Bridge: Development and Financing Project, Peter J. Reidy, 627

BRIDGES (Anchorages)

Verrazano-Narrows Bridge: Construction of Tower Foundations and Anchorages, Nomer Gray and George H. Dacancq, 659

BRIDGES (Decking)

Aluminum Orthotropic Bridge Deck in Pittsburgh, W. M. Rogerson, et al., 621

Bridge Deck Resurfaced With Epoxy Mortar, Paul C. Perry, 610

New Deck Appeases Bridge of the Gods, N. W. Haner, 605

BRIDGES (Girder)

Beauty and the San Mateo Creek Bridge, R. C. Cassano and M. H. Jacobs, 601

The First Hot-Dip Galvanized Bridge in the U.S., Frank J. Brechting, Jr., 575

Prestressed Steel Stringers Solve Bridge Clearance Problem, Lewis Levine and John McLoughlin, 20

BRIDGES (Orthotropic)

Steel Deck Bridge for Japan's Largest Lake, Yasuo Kawano, 184

BRIDGES (Suspension)

Aerodynamic Stability of H Sections, Daniel Dicker, 174

Angostura Suspension Bridge Spans the Orinoco, Paul Lustgarten, 400

Theoretical Analysis of Suspension Bridges, Saafan A. Saafan, 110

Three-Dimensional Suspension Structures, Charles H. Thornton and Charles Birnstiel, 92

Verrazano-Narrows Bridge: Construction of Tower Foundations and Anchorages, Nomer Gray and George H. Decancq, 659

Verrazano-Narrows Bridge: Development and Financing Project, Peter J. Reidy, 627

Vibration Frequencies of the Chesapeake Bay Bridge, A. Hughlett Mason and Dean S. Carder, 337

BUCKLING

Buckling of Cylindrical Shells under Axial Compression, A. N. Sherbourne and R. M. Korol, 584

Buckling of Open Cylindrical Shells, Kuanghan Chu and G. Krishnamoorthy, 367

Buckling of Soil-Surrounded Tubes, Ulrich Luscher, 496

Columns and Beams Braced by Diaphragms, Samuel J. Errera, George Pincus, and Gordon P. Fisher, 111

Complementary Energy Method for Buckling, Cenap Oran, 574

Direct Analysis of Continuous Beam-Columns, John Dundurs, Seng-Lip Lee, and Peter A. Hampe, 663

Eccentrically Loaded Steel Columns with Initial Curvature, Edwin C. Rossow, George B. Barney, and Seng-Lip Lee, 438

Effect of Boundary Conditions on Shell Buckling, Leon R. L. Wang, L. Rodriquez-Agrait, and William A. Litle, 16

General Theory of Cyclically Symmetric Frames, M. J. L. Hussey, 589

Inelastic Buckling and Sidesway of Concrete Frames, Wen F. Chang, 606

Local Instability in Plates and Channel Struts, A. C. Walker, 669

Longitudinal Stiffeners for Compression Members, Maurice L. Sharp, 445

Model for Compression of Elastic-Plastic Cylinders, R. M. Korol and A. N. Sherbourne, 557

Optimum Design—Minimum Weight Versus Fully Stressed, Thomas P. Kicher, 24

Optimum Design of Columns Supported by Tension Ties, Hagen R. Mauch and Lewis P. Felton, 467

Snap-Through Buckling of Framed Triangulated Domes, Rodolfo J. Aguilar, 329

Stability of Multilayer Sandwich Plates, Julius P. Wong and Ahmed E. Salama, 40

Stability of Rigid Frames with Nonuniform Members, Chu-Kia Wang, 456

Study of Stability in the Hyperbolic Paraboloid, Kenneth M. Leet, 664

BUILDINGS

Aseismic Design of Multistory Systems, E. F. Kokinopoulos, 301

Books on Estimating and Costs, John W. Breed, 359

Building Design Using Linear Programming, Moshe F. Rubinstein and John Karagozian, 178

Computers and the Design of The World Trade Center, Richard E. Taylor, 103

Computer Design of 100-Story John Hancock Center, Fazlur R. Khan, Srinivasa H. Iyengar, and Joseph P. Colaco, 162

Criticism and the Advancement of Building Engineering, Edward Cohen, 350

Design of Cable Roof for Madison Square Garden, Fred Fischer, Jr., 355

Drift Study of Tapered Frameworks, John F. Fleming, Walter J. Podolny and Thomas S. Rile, 375

Ductility of Building Frames under Earthquake Loads, Charles Mackintosh, 425

Engineered Structures at Expo 67, Hal W. Hunt, 310

Madison Square Garden—Fabrication and Erection of Cable-Supported Roof, J. A. Sterner, 534

An Organization for Construction Education, L. E. Stiffler, 370

Pole Buildings Go Modern, W. A. Norum, 635

Service Structure Concepts for Post-Saturn Rockets, Merrill E. Crissey, 296

Three-Dimensional Analysis of Tier Buildings, William Weaver, Jr. and Mark F. Nelson, 169

Tulsa Exposition Building—Hanging Cantilevers Provide Cover Framing, Melvin L. Sedlacek and Bert E. Griffin, 222

BUILDINGS *Continued*
Water-Filled Tubular Steel Columns—Fire Protection without Coating, L. G. Seigel, 639
Wind and Movement in Tall Buildings, Fu-kuei Chang, 352

BUILDINGS (Apartments)
The John Hancock Center, Fazlur R. Khan, 532

BUILDINGS (Codes)
Building Codes, William H. Correale, 141
Earthquake Requirements in Building Codes, Melvin W. Jackson, 427
Pole Buildings Go Modern, W. A. Norum, 635
Wood Engineering in Forestry Laboratories, D. E. Kennedy, 513

BUILDINGS (Office)
Drilled-pier Cofferdam for a Building, Harold Engstrom and Robert Oates, 63
The John Hancock Center, Fazlur R. Khan, 532
New Medical Building Uses Precast Concrete, Frank Porter and Elmo Marker, 325
A Welded Steel Frame Skyscraper, Ezra Meir, 123

BULKHEADS
Bulkhead and Excavation Bracing Failures, George B. Sowers and George F. Sowers, 71

CABLES
Computer Design of a Tower and Cable System, R. A. Williamson, H. F. Stevenson, and P. W. Van der Pas, 217
Design of Cable Roof for Madison Square Garden, Fred Fischer, Jr., 355
Madison Square Garden—Fabrication and Erection of Cable-Supported Roof, J. A. Sterner, 534
Oakland Coliseum Features Cable Supported Roof, 93
Three-Dimensional Suspension Structures, Charles H. Thornton and Charles Birnstiel, 92
Tulsa Exposition Building—Hanging Cantilevers Provide Cover Framing, Melvin L. Sedlacek with Bert E. Griffin, 222

CAISSONS
Verrazano-Narrows Bridge: Construction of Tower Foundations and Anchorages, Nomer Gray and George H. Dacancq, 659

CANALS
Coastal Parallel Canals with Intermediate Drains, Srisakdi Charmonman, 223
Dynamic Soil Strength and Slope Stability, Willard Ellis and V. B. Hartman, 175
New York State's Unique Canal System, Earl Scothon, 330
Shallow Water Waves in Canals of Variable Section, E. V. Laitone, 87

CAVITATION
Fluctuation of Pressure in Conduit Expansions, Hunter Rouse and Vladimir Jezdinsky, 191
Hydro Machinery Laboratory, Maurice L. Albertson and J. Paul Tullis, 684

CEMENTS
Cement Stabilization of Volcanic Materials, Roland A. Pettitt, 588
Expansive Cements in the United States, Philip W. Gutmann, 595
How the California Water Project Endeavors to Get Uniformly Excellent Concrete, Lewis H. Tuthill, 421
Soil-Cement Base for a Runway, C. W. Barenfanger, 418
Sulphur-Aggregate Concrete, John M. Dale and Allen C. Ludwig, 698

CHANNELS (Waterways)
Characteristics of M1 Backwater Curves, Nagar S. Lakshmana Rao and K. Sridharan, 224
Comprehensive River Stabilization, Walter C. Carey, 645
Computation of Discharge Including Over-Bank Flow, C. J. Posey, 27
Factors Determining the Strength of Secondary Flow, Chao-Lin Chiu, 402
Flood Routing in an Irregular Channel, Alan G. Fletcher and Wallis S. Hamilton, 237
Flow Equation for the Sluice Gate, Nallamuthu Rajaratnam and K. Subramanya, 408
Graphical Comparison of Uniform Flow in Open Channels, Paul Cella, 341
Resistance Relationships for Alluvial Channel Flow, R. J. Garde and Ranga K. G. Raju, 275
Sedimentation Research Needs in Semiarid Regions, Kenneth G. Renard and Robert B. Hickok, 279
Spectral Analysis of Sand Waves, Carl F. Nordin, Jr. and James H. Algert, 586
Stable Channels with Gravel-Paved Beds, Rolf Kellerhals, 473
Urban Hydrology—A Redirection, D. Earl Jones, 361

CLAY (Material)
Anisotropy and Stress Reorientation in Clay, James M. Duncan and H. Bolton Seed, 80
Analysis of Consolidation by Rate Process Theory, T. H. Wu, D. Resendiz, and R. J. Neukirchner, 580
Behavior of a Soil Mass Under Dynamic Loading, R. W. Sparrow and A. C. Tory, 32
Dynamic Soil Strength and Slope Stability, Willard Ellis and V. B. Hartman, 175
Electrokinetic Stabilization of an Illitic Clay, Melvin I. Esrig and John P. Gemeinhardt, Jr., 502
Foundation Clay Shrinkage Caused by Large Trees, Mark J. Hammer and Orville B. Thompson, 86
Shear Strength Properties of Two Stratified Clays, Kwan Yee Lo and Victor Milligan, 414
Stability of Atchafalaya Levees, Robert I. Kaufman and Frank J. Weaver, 235

CLAY (Material) *Continued*
Stability of Clay at Vertical Openings, Bengt B. Broms and Hans Bennermark, 544
Strength Variation Along Failure Surfaces in Clay, J. M. Duncan and H. Bolton Seed, 64
Strength Characteristics of Desiccated Clays, Geoffrey E. Blight, 15
Subgrade Stress and Deformation Under Dynamic Load, Stephen F. Brown and Peter S. Pell, 398
Subsoils and Foundation Design in Richmond, Va., Leo Casagrande, 70
Temperature Effects on Clay Soil Consolidation, Robert E. Paaswell, 150

COASTAL ENGINEERING
Abstracts of Papers, Tenth Conference on Coastal Engineering, Coastal Engineering Research Council, Waterways and Harbors Division, ASCE, M. P. O'Brien, Chmn., 642

CODES
Gas Pipeline Safety by Design, Fred C. Culpepper, Jr., 333

COEFFICIENTS
Classification System for Estuaries, Bård Glenne, 448
Dividing Flow in an Open Channel, Shiu Wai Law and Alan J. Reynolds, 130
Experiments on Lateral Dispersion in Porous Media, Wen-Hsiung Li and Fu-Hsiung Lai, 74
Wind Loads on Dome-Cylinder and Dome-Cone Shapes, F. J. Maher, 54

COFFERDAMS
Bulkhead and Excavation Bracing Failures, George F. Sowers and George B. Sowers, 71
Drilled-pier Cofferdam for a Building, Harold Engstrom and Robert Oates, 63

COLD WEATHER CONSTRUCTION
Highway Construction in Alaska, Donald E. Stein, 587
Replacing East Canyon Dam While Operations Continue, Merlin D. Copen and Ernest A. Lindholm, 100
Restoring Salt-Damaged Highway Bridges, Robert J. Walsh, 429
Water Supply and Waste Disposal in Alaska Native Communities, K. C. Lauster, 148
Winter Construction of Earthwork and Foundations, Delmar D. Yoakum, 377

COLUMNS (Structural)
Behavior of Splices in Beam-Column Connections, Joseph P. Colaco and Chester P. Siess, 000
Columns and Beams Braced by Diaphragms, Samuel J. Errera, George Pincus, and Gordon P. Fisher, 111
Complementary Energy Method for Buckling, Cenap Oran, 574
Direct Analysis of Continuous Beam-Columns, John Dundurs, Seng-Lip Lee, and Peter A. Hampe, 652
Eccentrically Loaded Steel Columns with Initial Curvature, Edwin C. Rossow, George B. Barney, and Seng-Lip Lee, 438
Effects of Cold-Forming on Light-Gage Steel Members, Kenneth W. Karren and George Winter, 470
Finite Difference Accuracy in Structural Analysis, Nancy Jane Cyrus and Robert E. Fulton, 000
Inelastic Buckling and Sidesway of Concrete Frames, Wen F. Chang, 606
Optimum Design of Columns Supported by Tension Ties, Hagen R. Mauch and Lewis P. Felton, 467
Stability of Transmission Line Structures, George A. Costello, 517
Three-Dimensional Analysis of Tier Buildings, William Weaver, Jr. and Mark F. Nelson, 169
Water-Filled Tubular Steel Columns—Fire Protection without Coating, L. G. Seigel, 639

COMPACTING
Cement Stabilization of Volcanic Materials, Roland A. Pettitt, 588
Construction Pore Pressures in Three Earth Dams, Chung Yuan Li, 501

COMPOSITE STRUCTURES
Steel Deck Bridge for Japan's Largest Lake, Yasuo Kawano, 184
Structural Tests on a Composite Floor System, John F. McDermott, 232

COMPRESSION TESTS
Behavior of Concrete in Biaxial Compression, George S. Robinson, 393

COMPUTATION
Positive Area Calculations by Coordinates, Francis E. Griggs, Jr., 38
Report on Small Computers, C. J. Montgomery, 437
Sectional Properties of T-Sections, T. T. Fatehi, 363

COMPUTERS
Aseismic Design of Multistory Systems, E. F. Kokinopoulos, 301
Building Design Using Linear Programming, Moshe F. Rubinstein and John Karagozian, 178
Collapse and Shakedown Loads of Plane Frames, J. Michael Davies, 528
Compact Analysis for Tower Structures, Alfred H. Palmer, 273
Computer-Aided Bridge Design, Gerald M. Sturman, Leland C. Albertson, Jr., C. Allin Cornell, and Jose M. Roesset, 553
Computer Analysis of the F-111 Wing Assembly, Joseph Antebi, Edwin C. Rossow, Indravadan K. Shah, and Jayant M. Shah, 30
Computer Analysis of Plane and Space Structures, Semih S. Tezcan, 667

COMPUTERS *Continued*
Computer Analysis of Towers Verified by Testing, Charles F. Beck and Max Zar, 186
Computer Analysis of Two-Hinged Circular Arches, Robert C. Cornforth and S. Bart Childs, 477
Computer Design of a Tower and Cable System, R. A. Williamson, H. F. Stevenson, and P. W. Van der Pas, 217
Computer Design of 100-Story John Hancock Center, Fazlur R. Khan, Srinivasa H. Iyengar, and Joseph P. Colaco, 162
Computers and the Design of The World Trade Center, Richard E. Taylor, 103
Cracked Pavement Slabs With Nonuniform Support, William R. Hudson and Hudson Matlock, 104
Datalink: A Structural Laboratory Data System, William A. Litle, 525
DATALINK: A Structural Laboratory On-Line Language, Kenneth F. Reinschmidt, 84
Eavironment for Problem-Oriented Languages, Edward L. Murphee, Jr., John W. Melin, and Steven J. Fenves, 159
Finite Difference Accuracy in Structural Analysis, Nancy Jane Cyrus and Robert E. Fulton, 200
General Method for Beams on Elastic Supports, Ralph R. Mozingo, 472
Homologous Deformations of Tiltable Telescopes, Sebastian von Hoerner, 567
Hydropower Project Output Optimization, Warren A. Hall and Theodore G. Roefs, 711
Ill-Conditioned Stiffness Matrices, Jayant M. Shah, 69
Iterative Design and Structural Optimization, Kenneth F. Reinschmidt, C. Allin Cornell, and John F. Brotchie, 134
Languages for User-Defined Member Design Processes, Robert D. Logcher, Salvatore G. Mazzotta, and Lavette C. Teague, Jr., 466
Least Squares Estimation of Mixing Coefficients, Edward L. Thackston, James R. Hays, and Peter A. Krenkel, 494
Machine Computation of Trigonometric Functions, David Bushnell and Wayne A. Madsen, 99
Mathematical Model for Water Pollution Control Studies, Alvin S. Goodman and William E. Dobbins, 315
Mathematical Models of Catchment Behavior, David R. Dawdy and Terence O'Donnell, 593
Minimum Cost Design of Frames, R. A. Ridha and R. N. Wright, 507
Model Studies of Wind Loads on Flat-Top Cylinders, D. M. Purdy, F. J. Maher, and Daniel Frederick, 282
New Method for Exact Analysis of Folded Plates, Paul E. Mast, 581
Numerical Analysis of Soil-Moisture Systems, Irwin Remson, Alfonso A. Fungaroli, and G. M. Hornberger, 224
Optimum Design—Minimum Weight Versus Fully Stressed, Thomas P. Kicher, 24
Post: Problem-Oriented Subroutine Translator, John W. Melin, 198
Report on Small Computers, C. J. Montgomery, 437
Simple Tools in a World of Computers, Frederick T. Mavis, 161
Simulation As a Problem-Solving Technique, Ray R. Berman, 208
Slope Deflection and Moment Flow Graphs, Chuan C. Feng and Kenneth A. Stead, 478
Stability of Rigid Frames with Nonuniform Members, Chu-Kia Wang, 456
Stream-Aquifer System Analysis, Ali Eshett and Morton W. Bittinger, 628
Structural Optimization by Nonlinear Programming, Daniel M. Brown and Alfredo H.-S. Ang, 212
STRUDL—A Computer System for Structural Design, Robert D. Logcher and Gerald M. Sturman, 620
Synthesis of a Space Truss Based on Dynamic Criteria, J. William Young, Jr. and Henry N. Christiansen, 129
Tabular Decision Logic for Structural Design, Steven J. Fenves, 140
Theoretical Analysis of Suspension Bridges, Saafan A. Saafan, 110
Three-Dimensional Analysis of Tier Buildings, William Weaver, Jr. and Mark F. Nelson, 169
Two Computer Approaches to Subway Design, Winfield O. Salter, 205
Vibration of Nonuniform Simply-Supported Beams, Arthur C. Heidebrecht, 392
Waterhammer Analysis by Analog Computers, Don J. Wood, 235

CONCRETE
Advance Planning Speeds Construction of Mossyrock Dam, Charles O. Faris, 631
Behavior of Concrete in Biaxial Compression, George S. Robinson, 393
Calculation of Diameter of Stretched Rubber Gasket, Paul W. Kao, 622
Cement-Treated Subbase Practice in U.S. and Canada, Edward L. Kawala, 443
Chlorinated Rubber as a Concrete Curing Material, Fred J. Holland, 340
Concrete Patching on a Runway, 624
Concrete Pavements Tailored to Traffic, K. E. Carter, 299
Constructing a Temporary Stream Gaging Station, Perry H. Rahn and M. Todd Giddings, 693
Drilled-pier Colferdam for a Building, Harold Engstrom and Robert Oates, 63
Earthquake Requirements in Building Codes, Melvin W. Jackson, 427
Expansive Cements in the United States, Philip W. Gutmann, 595
How the California Water Project Endeavors to Get Uniformly Excellent Concrete, Lewis H. Tuthill, 421
Inelastic Buckling and Sidesway of Concrete Frames, 606
Minor Concessions to Contractors Produce More Economical Concrete Pavements, Harold J. Halm, 619

CONCRETE *Continued*
Restoring Salt-Damaged Highway Bridges, Rober J. Walsh, 429
Stability of Tensile Cracks in Concrete Beams, Nat W. Krahl, Narbey Khachaturian, and Chester P. Siess, 121
Structural Tests on a Composite Floor System, John F. McDermott, 232
Sulphur-Aggregate Concrete, John M. Dale and Allen C. Ludwig, 698
Ultimate Load Capacity of Arch Dams, Jorge I. Bustamante and Emilio Rosenblueth, 230
Underground Garage Benefits from Innovations, Fritz Kramrisch, 689
Verrazano-Narrows Bridge: Construction of Tower Foundations and Anchorages, Nomer Gray and George H. Dacancq, 659

CONCRETE (Lightweight)
Economy, Efficiency and Esthetics in Small Concrete Bridges, Arvid Grant, 432
New Deck Appeases Bridge of the Gods, N. W. Haner, 605

CONCRETE (Precast)
New Medical Building Uses Precast Concrete, Frank Porter and Elmo Marker, 325
A Prestressed, Lightweight Concrete Bridge Spans 131 Ft, George Laszlo, 126
Shallow Prestressed Girders for Fresno Underpass, S. H. Studzinski, 577

CONCRETE (Prestressed)
Economy, Efficiency, and Esthetics in Small Concrete Bridges, Arvid Grant, 432
Launcher Erects Post-Tensioned Girders in Boliva, Paul Stergiou, 383
Review of Concrete Beams Failing in Shear, Boris Bresler and J. G. MacGregor, 342
Seismic Resistance of Prestressed Concrete Structures, K. S. Savriev, 385
Suspension Bridge Approaches on the Orinoco, Paul Lustgarten, 400

CONCRETE (Reinforced)
Behavior of Splices in Beam-Column Connections, Joseph P. Colaco and Chester P. Siess, 562
Floating V/STOL Airport Proposed, Edward G. Nawy and Cooper B. Bright, 424
Limit Design by Successive Moment Distribution, Carl Berwanger, 646
Plastic Hinging In Reinforced Concrete, Ned H. Burns and Chester P. Siess, 44
Review of Concrete Beams Failing in Shear, Boris Bresler and J. G. MacGregor, 342
Rotational Capacity of Reinforced Concrete Beams, W. Gene Corley, 451
Steel and Corrosion—Some Methods of Protection, Ronald A. Antonio, 170

CONDUITS (Water)
Distribution of Head at a Rectangular Conduit Outlet, Satya Prakash Garg, 703
Hydraulic Efficiency in Culvert Design, Fred W. Blaisdell, 57
Progress Report—ASCE Combined Sewer Separation Project, M. B. McPherson, 713
Secondary Currents in a Corner, James A. Liggett, Chao-Lin Chiu, and Ling S. Mioa, 115

CONSERVATION
Is There an East-West Water Conflict?, Floyd E. Dominy, 499

CONSOLIDATION
Analysis of Consolidation by Rate Process Theory, T. H. Wu, D. Resendiz, and R. J. Neukirchner, 580
Consolidation of Slightly Overconsolidated Soils, Gerald Patrick Raymond, 124
Dynamic Strength of Anistropically Consolidated Sand, Kenneth L. Lee and H. Bolton Seed, 492
Stability of Atchafalaya Levees, Robert I. Kaufman and Frank J. Weaver, 235
Subsoils and Foundation Design in Richmond, Va., Leo Casagrande, 70
Temperature Effects on Clay Soil Consolidation, Robert E. Paaswell, 150
Willard Dam—Behavior of a Compressible Foundation, 220

CONSTRUCTION
Aluminum Orthotropic Bridge Deck in Pittsburgh, W. M. Rogerson, et al., 621
Anticipated Foundation Movement Affects Design, George Evans, 219
Asphalt Paving for a New Airport in Alabama, Reginald Kerlin, 599
Cement-Treated Subbase Practice in U.S. and Canada, Edward L. Kawala, 443
Computer Design of 100-Story John Hancock Center, Fazlur R. Khan, Srinivasa H. Iyengar, and Joseph P. Colaco, 162
Construction of Morrow Point Power Plant and Dam, James D. Seery, 3
Construction Pore Pressures in Three Earth Dams, Chung Yuan Li, 501
Dynamic Programming for Project Cost-Time Curves, William S. Butcher, 39
Eight-Berth Marine Terminal in Deep Bay Mud, Eugene L. Sembler, 523
Engineered Structures at Expo 67, Hal W. Hunt, 310
Grouting a Dam Cutoff in Cavernous Limestone, Leland F. Grant and John S. Winefordner, 706
Harvard Gulch Flood Control Project, Kenneth R. Wright, 45
Homestake Collection System: Intakes and Conduits, H. C. Cox, W. H. Blair, and R. L. Perley, 289
Launcher Erects Post-Tensioned Girders in Boliva, Paul Stergiou, 383
Madison Square Garden—Fabrication and Erection of Cable-Supported Roof, J. A. Sterner, 534
Materials Control and Test Procedures, Robert F. Baker, 17

CONSTRUCTION *Continued*
Navy Anniversary—CEC and the Seabees, 316
Pole Buildings Go Modern, W. A. Norum, 635
Rockfill Design—Carters Dam, Fred A. Robeson and Robert L. Crisp, Jr., 25
Siting of Manned Lunar Launch Facilities, Arthur G. Porcher, 647
Willard Dam—Behavior of a Compressible Foundation, 220
Worlds of Two Giants, Paul M. Wright, 21

CONSTRUCTION EQUIPMENT
Books on Estimating and Costs, John W. Breed, 359
Equipment Replacement Decisions, John W. Alltucker, 202
Equipment Selection for Mangla Dam, Ray N. Atkinson, 284
Innovations in the Laying and Bedding of Pipe, D. L. Chappelear and E. L. Gloyna, 692
Minor Concessions to Contractors Will Produce More Economical Concrete Pavements, Harold J. Halm, 619

CONSTRUCTION INDUSTRY
Engineering and Construction for a Junior High Curriculum, E. E. Halmos, Jr., 306
An Organization for Construction Education, L. E. Stiffler, 370

CONSTRUCTION MATERIALS
Expansive Cements in the United States, Philip W. Gutmann, 595
Soil-Cement Base for a Runway, C. W. Barenfanger, 418
Waterproofing a Tunnel Under a Canal, Sami Tibshirani, 406

CONSTRUCTION PROCEDURE
Advance Planning Speeds Construction of Mossyrock Dam, Charles O. Faris, 631
Beauty and the San Mateo Creek Bridge, R. C. Cassano and M. H. Jacobs, 601
Equipment Selection for Mangla Dam, Ray N. Atkinson, 284
Holland—Between River and Sea, David P. Billington, 417
How the California Water Project Endeavors to Get Uniformly Excellent Concrete, Lewis H. Tuthill, 421
The Legal Implications of Quality Control, Donald McL. Davidson, 612
Minor Concessions to Contractors Will Produce More Economical Concrete Pavements, Harold J. Halm, 619
New Medical Building Uses Precast Concrete, Frank Porter and Elmo Marker, 325
Oakland Coliseum Features Cable Supported Roof, 93
Placing the Underwater Tubes for BART, 554
Pongolapoort Dam for Southern African Irrigation, Gerhard Everwyn, 686
Slurry-Trench Technique in Deep Foundation Construction, Ben C. Gerwick, Jr., 704
Winter Construction of Earthwork and Foundations, Delmar D. Yoakum, 377

CONSULTANTS
Engineering Education—A Consultant's View, William J. Carroll, 435
Negotiating with ASCE Manual 45, N. F. Turner, 398
Opportunities for Engineers on Foreign Projects, John Huston, 388

CONTRACTS
Negotiating with ASCE Manual 45, N. F. Turner, 398
Worlds of Two Giants, Paul M. Wright, 21

CORROSION
Economy of Corrosion-Resistant Steel in Highway Bridges, John M. Hayes and Samuel P. Maggard, 81
The First Hot-Dip Galvanized Bridge in the U.S., Frank J. Brechting, Jr., 575
Steel and Corrosion—Some Methods of Protection, Ronald A. Antonio, 170

COSTS
Books on Estimating and Costs, John W. Breed, 359
Equipment Replacement Decisions, John W. Alltucker, 202
Hurricane-Flood Protection in the United States, Harry S. Perdikis, 60
Optimum Size Seaport, Carl H. Plumlee, 157

CRACKING (Fracturing)
Behavior of Concrete in Biaxial Compression, George S. Robinson, 393

CRITICAL PATH METHOD
Dynamic Programming for Project Cost-Time Curves, William S. Butcher, 39
Making CPM Work, H. G. Hoggatt, 369

CULVERTS
Harvard Gulch Flood Control Project, Kenneth R. Wright, 45
Hydraulic Efficiency in Culvert Design, Fred W. Blaisdell, 57
Moments in Buried Box Culverts, P. C. Dave, 564

CURVED BEAMS
Analysis of Laterally-Loaded Continuous Curved Beams, Muppidi N. Reddy and Jan J. Tuma, 623

CURVES
Improved Method of Flood Routing, Eugene A. Graves, 379

DAMAGE
Hurricane-Flood Protection in the United States, Harry S. Perdikis, 60

DAMPING

Dynamic Response of a Restrained Sphere, Allen T. Hjelmfelt, John F. Carney, III, Lyle F. Mockros, and Seng-Lip Lee, 1

DAMS

Earth Movement at Baldwin Hills Reservoir, Robert B. Jansen, Gordon W. Dukleth, Bernard B. Gordon, Laurence B. James, and Clyde E. Shields, 403

Grouting a Dam Cutoff in Cavernous Limestone, Leland F. Grant and John S. Winefordner, 706

Holland—Between River and Sea, David P. Billington, 417

Homestake Collection System: Intakes and Conduits, H. C. Cox, W. H. Blair, and R. L. Perley, 289

Hydropower Developments in India, Asit K. Biswas, 48

Inland Delta Building Activity of Kosi River, Chintaman V. Gole and Shrikrishna V. Chitale, 37

Joint ASCE—USCOLD Committee on Design Criteria for Large Dams. Design and Construction of Dams, ASCE, 671

Kaweah River Water Rights Settlement by Purchase, Stanley M. Barnes, 34

Rockfill Design—Carters Dam, Fred A. Robeson and Robert L. Crisp, Jr., 25

DAMS (Arch)

Replacing East Canyon Dam While Operations Continue, Merlin D. Copen and Ernest A. Lindholm, 100

Rock Mechanics Engineering for Boundary Project, Adolf A. Schilling, 10

Steady-State Theories for Drainage, Don Kirkham, 656

Design and Construction Features: Boundary Project, H. V. Strandberg, 660

Pongolapoort Dam for South African Irrigation, Gerhard Everwyn, 686

Ultimate Load Capacity of Arch Dams, Jorge I. Bustamante and Emilio Rosenblueth, 230

DAMS (Concrete)

Construction of Morrow Point Power Plant and Dam, James D. Seery, 3

How the California Water Project Endeavors to Get Uniformly Excellent Concrete, Lewis H. Tuthill, 421

Replacing East Canyon Dam While Operations Continue, Merlin D. Copen and Ernest A. Lindholm, 100

Ultimate Load Capacity of Arch Dams, Jorge I. Bustamante and Emilio Rosenblueth, 230

DAMS (Earth)

Construction Pore Pressures in Three Earth Dams, Chung Yuan Li, 501

Dynamic Soil Strength and Slope Stability, Willard Ellis and V. B. Hartman, 175

Earth Dams—Design As You Build, C. Y. Li, 77

Earthquake Response of Earth Dams, Anil K. Chopra, 138

Earthquake Stress Analysis in Earth Dams, Ray W. Clough and Anil K. Chopra, 662

Electro-osmotic Stabilization of West Branch Dam, Claude A. Fetzer, 540

Equipment Selection for Mangla Dam, Ray N. Atkinson, 284

Grain Size vs Dollars for Drainage Aggregates, Harry R. Cedergren, 608

Graphs for Locating the Line of Seepage in an Earth Dam, M. R. Carstens and George D. May, 328

Seepage Prevention with Impermeable Membranes, Charles E. Staff, 277

Seepage Under a Rectangular Dam, George J. W. King, 274

DAMS (Rockfill)

Large-Scale Testing of Rockfill Materials, Raul J. Marsal, 498

Performance of El Infiernillo Dam, 1963–1966, Raul J. Marsal and Luis Ramirez de Arellano, 189

Post-Construction Behavior of Round Butte Dam, James G. Patrick, 506

Rockfill Design-Carters Dam, Fred A. Robeson and Robert L. Crisp, Jr., 25

Rockfill Structures Subject to Water Flow, Alan K. Parkin, David H. Trollope, and John D. Lawson, 412

DATA SYSTEMS

Datalink: A Structural Laboratory Data System, William A. Litle, 525

DEFLECTION

Behavior of a Soil Mass Under Dynamic Loading, R. W. Sparrow and A. C. Tory, 32

Building Design Using Linear Programming, Moshe F. Rubinstein and John Karagozian, 178

Drift Study of Tapered Frameworks, John F. Fleming, Walter Podolny, Jr., and Thomas S. Rile, 375

Fatigue Characteristics of Flexible Pavement, Hyoungkey Hong, 365

Force-Deflection Relations From Dynamic Tests, Paul C. Jennings, 193

Homologous Deformations of Tiltable Telescopes, Sebastian von Hoerner, 567

Post-Construction Behavior of Round Butte Dam, James G. Patrick, 506

Stability of Multilayer Sandwich Plates, Julius P. Wong and Ahmed E. Salama, 40

Structural Tests on a Composite Floor System, John F. McDermott, 232

Theoretical Analysis of Suspension Bridges, Saafan A. Saafan, 110

Wind and Movement in Tall Buildings, Fukuei Chang, 352

DEFORMATION

Bending of Hyperbolic Paraboloid Structures, Roy R. Russell and Kurt H. Gerstle, 489

DEFORMATION *Continued*
Complementary Energy Concept for Large Deformations, Cenap Oran, 633
Inflatable Shells: Pressurization Phase, John W. Leonard, 24
Stress Computation in Soil Media, Hans U. Smoltczyk, 280
Torsional Response of Tapered I-Girders, George C. Lee and Barna A. Szabo, 597

DELTAS
Inland Delta Building Activity of Kosi River, Chintaman V. Gole and Shrikrishna V. Chitale, 37

DENSITY
Nominal Diameter of Floc Related to Oxygen Transfer, James A. Mueller, Karl G. Voelkel, and William C. Boyle, 304

DESALTING
Engineering Aspects of a Nuclear Desalting Plant, Joseph G. Perri, 446
Partial Demineralization of Brackish Waters, Robert L. Sanks and Warren J. Kaufman, 131

DESIGN
AITC Timber Construction Manual, Russell P. Wibbens, 505
Break-Away Sign Supports Enhance Highway Safety, Charles J. Keese, et al., 164
Building Codes, William H. Correale, 141
Building Design Using Linear Programming, Moshe F. Rubinstein and John Karagozian, 178
Cement-Treated Subbase Practice in U.S. and Canada, Edward L. Kawala, 443
Commentary on Welded Cover-Plated Beams, Report of the Subcommittee on Cover Plates, Task Committee on Flexural Members, Structural Division, ASCE, John W. Fisher, Chmn., 594
Computer-Aided Bridge Design, Gerald M. Sturman, Leland C. Albertson, Jr., C. Allin Cornell, and Jose M. Roesset, 553
Computer Design of a Tower and Cable System, R. A. Williamson, H. F. Stevenson, and P. W. Van der Pas, 217
Computers and the Design of The World Trade Center, Richard E. Taylor, 103
Concrete Pavements Tailored to Traffic, K. E. Carter, 299
Design of Cable Roof for Madison Square Garden, Fred Fischer, Jr., 355
Design of Desilting Works for Irrigation Systems, Floyd E. Dominy, 390
Distribution System Equalizing Storage Hydraulics, M. B. McPherson and R. Prasad, 207
Economy, Efficiency, and Esthetics in Small Concrete Bridges, Arvid Grant, 432
The First Hot-Dip Galvanized Bridge in the U.S., Frank J. Brechting, Jr., 575
Gas Pipeline Safety by Design, Fred C. Culpepper, Jr., 333
Gust Loading Factors, Alan G. Davenport, 536
Harvard Gulch Flood Control Project, Kenneth R. Wright, 45
Highway Construction in Alaska, Donald E. Stein, 587
Highway Esthetics, 405
Highway Designed for Safety, 625
Homestake Collection System: Intakes and Conduits, H. C. Cox, W. H. Blair, and R. L. Perley, 289
Inelastic Beams Under Moment Gradient, Maxwell G. Lay and Theodore V. Galambos, 570
The John Hancock Center, Fazlur R. Khan, 532
Joint ASCE—USCOLD Committee on Design Criteria for Large Dams. Design and Construction of Dams, 671
Languages for User-Defined Member Design Processes, Robert D. Logcher, Salvatore G. Mazzotta, and Lavette C. Teague, Jr., 466
Longitudinal Stiffeners for Compression Members, Maurice L. Sharp, 445
Minimum Cost Design of Frames, R. A. Ridha and R. N. Wright, 507
Neoprene Elastomer Bearings—Ten Years Experience, Robert Lee Pare, 591
Observations on Tile Drainage Performance, Arthur F. Pillsbury, 482
Optimum Design—Minimum Weight Versus Fully Stressed, Thomas P. Kicher, 24
Optimum Design of Columns Supported by Tension Ties, Hagen R. Mauch and Lewis P. Felton, 467
Pile Foundation for Oakland Coliseum, John J. Hallenbeck, Jr., and Robert E. Johnston, 210
Review of Concrete Beams Failing in Shear, Boris Bresler and J. G. MacGregor, 342
Slope Stability During Earthquakes, H. Bolton Seed, 610
Structural Optimization by Nonlinear Programming, Daniel M. Brown and Alfredo H.-s. Ang, 212
Urban Freeways: Architects Join in Their Design, George A. Elliott, III, 716
Willard Dam—Behavior of a Compressible Foundation, 220

DIKES
Eight-Berth Marine Terminal in Deep Bay Mud, Eugene L. Sembler, 523

DISPERSIONS
Dispersion from Sources in Nonuniform Seepage Flow, Wen-Hsiung Li and Raymond P. Canale, 6
Experiments on Lateral Dispersion in Porous Media, Wen-Hsiung Li and Fu-Hsiung Lai, 74

DOMES (Structural forms)
Engineered Structures at Expo 67, Hal W. Hunt, 310
General Theory of Cyclically Symmetric Frames, M. J. L. Hussey, 589
Snap-Through Buckling of Framed Triangulated Domes, Rodolfo J. Aguilar, 329
Wind Loads on Dome-Cylinder and Dome-Cone Shapes, F. J. Maher, 54

DRAINAGE
Construction Pore Pressures in Three Earth Dams, Chung Yuan Li, 501
Double Slope Method for Pumping Test Analysis, Kamal F. Saad, Ahmed Shukry, and Aly Baligh, 688
Drainage by Pumped Wells in Welton-Mohawk District, Theodore H. Moser, 486
Evaluation of Pipe Elbows as Flow Meters, John A. Replogle, Lloyd E. Myers, and Kenneth J. Brust, 373
Experimental and Numerical Study of Column Drainage, Keith K. Watson, 167
Grain Size vs Dollars for Drainage Aggregates, Harry R. Cedergren, 608
Harvard Gulch Flood Control Project, Kenneth R. Wright, 45
Holland—Between River and Sea, David P. Billington, 417
Hydrologic Characteristics of Soil Types, Heggie N. Holtan, Charles B. England, and Donald E. Whelan, 479
Ignition Noise in Neutron Moisture Gages, John F. Stone, A. Dudley Barefoot, and James E. Garton, 480
Numerical Analysis of Soil-Moisture Systems, Irwin Remson, Alfonso A. Fungaroli, and G. M. Hornberger, 224
Observations on Tile Drainage Performance, Arthur F. Pillsbury, 482
One-Dimensional Infiltration into Homogeneous Soil, Yu-Si Fok and Vaughn E. Hansen, 19
Perimeter Drainage to Protect Urban Lands, Robert T. Chuck, 61
Phreatophytes—Water Use and Potential Water Savings, Dean C. Muckel, 168
Proposed Project for a Salinity Problem at Abadan, M. B. Gholizadeh and Albert T. Petersen, 12
Research Guidelines to Sound Watershed Development, Roland R. Renne, 465
Steady Drainage of Two-Layered Soil, Gedeon Dagan, 638
Steady-State Theories for Drainage, Don Kirkham, 656
Transient Solutions for Drainage of Sloping Land, J. N. Luthin and J. C. Guitjens, 510
Urban Hydrology—A Redirection, D. Earl Jones, 361

DRAINS
Perimeter Drainage to Protect Urban Lands, Robert T. Chuck, 61
Plastic Pipe—A Progress Report, Jack W. Pierce, 307
Steady-State Theories for Drainage, Don Kirkham, 656

DREDGING
Placing the Underwater Tubes for BART, 554

DRILLING
Planned Community Development Over Rock, John A. Fichter, 396
Record Tunnel Excavation with Boring Machines, D. E. Cannon, 323

DRYDOCKS
Navy Anniversary—CEC and the Seabees, 316

DYNAMIC LOADS
Gust Loading Factors, Alan G. Davenport, 536

DYNAMIC RESPONSE
Slope Stability During Earthquakes, H. Bolton Seed, 610

DYNAMICS
Inelastic Response of Beams to Moving Loads, Teoktistos G. Toridis and Robert K. Wen, 31
Vibration of Nonuniform Simply-Supported Beams, Arthur C. Heidebrecht, 392

DYNAMIC STABILITY
Dynamic Stability of a Shallow Cylindrical Shell, Ivor K. McIvor and Carl H. Popelar, 81
Dynamic Strength of Anistropically Consolidated Sand, Kenneth L. Lee and H. Bolton Seed, 492

EARTH FILLS
Rockfill Design-Carters Dam, Fred A. Robeson and Robert L. Crisp, Jr., 25
San Francisco's Solid Wastes Crisis, Frank P. Sebastian, 571

EARTH PRESSURE
Bulkhead and Excavation Bracing Failures, George B. Sowers and George F. Sowers, 71

EARTHQUAKES
Aseismic Design of Multistory Systems, E. F. Kokinopoulos, 301
Comparison of Static and Dynamic Hysteresis, Robert D. Hansen, 204
Cyclic Stress Conditions Causing Liquefaction of Sand, Kenneth L. Lee and H. Bolton Seed, 524
Ductility of Building Frames Under Earthquake Loads, Charles Mackintosh, 425
Dynamic Strength of Anistropically Consolidated Sand, Kenneth L. Lee and H. Bolton Seed, 492
Earthquake Response of Earth Dams, Anil K. Chopra, 138
Earthquake Stability of Cohesive Slopes, W. D. Liam Finn, 676
Earthquake Stress Analysis in Earth Dams, Ray W. Clough and Anil K. Chopra, 662
Liquefaction of Saturated Sands During Cyclic Loading, H. Bolton Seed and Kenneth L. Lee, 519
Seismic Resistance of Prestressed Concrete Structures, K. S. Savriev, 385
Slope Stability During Earthquakes, H. Bolton Seed, 610

EARTHWORK
Role of the 'Calculated Risk' in Earthwork and Foundation Engineering, Arthur Casagrande, 530
Winter Construction of Earthwork and Foundations, Delmar D. Yoakum, 377

ECONOMICS
Economics of Parking Structures at Airports, Paul H. Stafford, 320
Highway Safety Elements in Aesthetic Design, James A. Head, 190
Hydro Project Formulation: Results in the Southeast, Henry C. C. Weinkauff and Clement P. Lindner, 677
Materials Control and Test Procedures, Robert F. Baker, 17
Minimum Cost Design of Frames, R. A. Ridha and R. N. Wright, 507
Partial Demineralization of Brackish Waters, Robert L. Sanks and Warren J. Kaufman, 131
The Ruhr and the Delaware, Allen V. Kneese, 200

ECONOMY
Economy of Corrosion-Resistant Steel in Highway Bridges, John M. Hayes and Samuel P. Maggard, 81

EDUCATION
Admit Civil Engineering Technicians to ASCE?, 546
Civil Engineering Education That Is, Chester A. Moore, 714
Civil Engineering in City and Regional Planning, Melville C. Branch and L. M. K. Boelter, 649
Civil Engineering—Its History, George F. Branigan, 297
A Civil Engineer Looks at Surveying Education, Peter A. Machinis, 56
Civil Engineers—Professionals or Technicians?, George M. Sicular, 708
Current Problems in Property Location, Ira M. Tillotson and Charles E. Snyder, 648
Engineering and Construction for a Junior High Curriculum, E. E. Halmos, Jr., 306
Engineering Education—A Consultant's View, William J. Carroll, 435
Highway Esthetics, 405
Inter-American Program: Past, Present, and Future, Frederick J. McGarry and Charles L. Miller, 604
International Hydrological Decade Program Abroad, Raymond L. Nace, 187
A New Concept of Civil Engineering Technology, Maynard Nugent, 133
An Organization for Construction Education, L. E. Stiffler, 370
Profile: The Engineering Technician, 548
Student Research on Building Foundations, T. William Lambe, 543
Surveying—The Paradox of Civil Engineering, Robert B. Read, 551

ELASTICITY
Arching for Vertically Buried Prismatic Structures, Phillip A. Abbott, 488
Buckling of Open Cylindrical Shells, Kuang-han Chu and G. Krishnamoorthy, 367
Cartesian Formulation of Membrane Theory, Ziad M. Elias, 345
Complementary Energy Concept for Large Deformations, Cenap Oran, 633
Deflection of Multilayer Soil Systems, K. Ueshita and George G. Meyerhof, 493
Dynamic Response of a Lined Rigid Inclusion, Shui Ho and Robert J. Hansen, 295
Earthquake Response of Earth Dams, Anil K. Chopra, 138
Effect of Foreign Inclusions on Properties of Solids, Longin B. Greszczuk, 516
Finite Beams on Elastic Foundations, Constancio Miranda and Keshavan Nair, 666
New Method for Exact Analysis of Folded Plates, Paul E. Mast, 581
Out-of-Plane Displacements and Stresses in a Torus, David J. McGill, 566
Stress Computation in Soil Media, Hans U. Smoltczyk, 280
Transient Response of Cylinders to Shear Waves, Hyman Garnet, Jacques Crouzet-Pascal, and Garbiel Isakson, 9
Transversally Isotropic Cylinders Under Band Loads, Howard S. Levine and Jerome M. Klosner, 53
Viscoelastic Layered System Subjected to Moving Loads, Russell A. Westman, 120

ELECTRIC POWER GENERATION
Hydropower Project Output Optimization, Warren A. Hall and Theodore G. Roefs, 711

ELECTRIC POWER PLANTS
Design and Construction Features: Boundary Project, H. V. Strandberg, 660
Power Generation—Its Status and Outlook, J. George Thon, 541

EMBANKMENTS
Distribution of Soil Pressures on Concrete Pipe, Howard C. Pettibone and Amster K. Howard, 180
Dynamic Soil Strength and Slope Stability, Willard Ellis and V. B. Hartman, 175

EMPLOYMENT
Civil Engineering Education That Is, Chester A. Moore, 714
Engineering Education—A Consultant's View, William J. Carroll, 435
Federal Employee-Management Cooperation: E. O. 10988, Leonard T. Crook, 665
Foreign Jobs—How to Locate, Apply and Qualify for them, John Huston, 634

ENGINEERING
Profile: The Engineering Technician, 548

ENGINEERING MECHANICS

Aerodynamic Stability of H Sections, Daniel Dicker, 174

Analysis of Laminated Shells of Revolution, Stanley B. Dong, 110

Beam on Tensionless Foundation, N. C. Tsai and Russell A. Westmann, 652

Behavior of Elastic Plastic Trusses with Unstable Bars, Giulio Maier, 73

Bending and Membrane Equilibrium in Cooling Towers, E. L. Albasiny and D. W. Martin, 137

Bending of Parallelogram Plates, B. D. Aggarwala, 309

Buckling of Open Cylindrical Shells, Kuanghan Chu and G. Krishnamoorthy, 367

Cartesian Formulation of Membrane Theory, Ziad M. Elias, 345

Compact Solution of Doubly-Curved Shell Equation, Graham H. Powell, 618

Comparison of Static and Dynamic Hysteresis, Robert D. Hansen, 204

Complementary Energy Method for Buckling, Cenap Oran, 574

Dynamic Analysis of Rings by Finite Differences, Robert E. Ball, 90

Dynamic Response of a Lined Rigid Inclusion, Shui Ho and Robert J. Hansen, 295

Dynamic Response of a Restrained Sphere, Allen T. Hjelmfelt, John F. Carney, III, Lyle F. Mockros, and Seng-Lip Lee, 1

Dynamic Stability of a Shallow Cylindrical Shell, Ivor K. McIvor and Carl H. Popelar, 81

Earthquake Stress Analysis in Earth Dams, Ray W. Clough and Anil K. Chopra, 662

Edge Load Solutions for Conical Shells, Jack R. Vinson, 714

Effect of Boundary Conditions on Shell Buckling, Leon R. L. Wang, L. Rodriquez-Agrait, and William A. Litle, 16

Effect of Foreign Inclusions on Properties of Solids, Longin B. Greszczuk, 516

Flood Routing in an Irregular Channel, Alan G. Fletcher and Wallis S. Hamilton, 237

Flow Direction Measurement by Hot-Wire Anemometry, J. W. Delleur, 182

Force-Deflection Relations From Dynamic Tests, Paul C. Jennings, 193

Inelastic Response of Beams to Moving Loads, Teoktistos G. Toridis and Robert K. Wen, 31

Inflatable Shells: Pressurization Phase, John W. Leonard, 24

Large Plastic Deformation of Pressurized Cylinders, Martin A. Slamon, 670

Machine Computation of Trigonometric Functions, David Bushnell and Wayne A. Madsen, 99

Method for Minimal Design of Axisymmetric Plates, George J. Megarefs, 509

Model Study of Dynamically Loaded Arch Structures, Don R. Denton and William J. Flathau, 669

Numerical Analysis of Noncircular Cylindrical Shells, Gordon B. Mah, 156

Out-of-Plane Displacements and Stresses in a Torus, David J. McGill, 566

Response of Liquid in a Rectangular Container, Helmut F. Bauer, 197

Simulation of Nonstationary Random Process, Masanobu Shinozuka and Y. Sato, 513

Stability of Multilayer Sandwich Plates, Julius P. Wong and Ahmed E. Salama, 40

Stability of Transmission Line Structures, George A. Costello, 517

Stochastic Model to Fatigue, Octavio A. Rascón Chavez, 347

Structural Metal Composites, Russel C. Jones, 50

Study of Stability in the Hyperbolic Paraboloid, Kenneth M. Leet, 664

Transient Response of Cylinders to Shear Waves, Hyman Garnet, Jacques Crouzet-Pascal, and Garbiel Isakson, 9

Transversally Isotropic Cylinders Under Band Loads, Howard S. Levine and Jerome M. Klosner, 53

Ultimate Load Capacity of Arch Dams, Jorge I. Bustamante and Emilio Rosenblueth, 230

Uncoupling Method for Diagonal-Band-Matrix Equation, Huang Chao, 346

Unsteady Flow of Solid-Liquid Suspension, Don J. Wood and T. Y. Kao, 143

Vibration of Nonuniform Simply-Supported Beams, Arthur C. Heidebrecht, 392

Vibration of Thin Shells under Initial Stress, George Herrmann and John Shaw, 717

Viscoelastic Layered System Subjected to Moving Loads, Russell A. Westmann, 120

Viscoelastic Wave Interaction with Cylindrical Cavity, Isaac M. Daniel, 151

Wave Propagation in Elastic-Plastic Solids, R. L. Bjork and C. Y. Liu, 718

ENVIRONMENTAL ENGINEERING

Atmospheric Sciences and the Engineer, Earl G. Droessler, 154

EPOXY RESIN

Aluminum Orthotropic Bridge Deck in Pittsburgh, W. M. Rogerson, et al., 621

Bridge Resurfaced With Epoxy Mortar, Paul C. Perry, III, 610

EROSION

By-Passing and Back-Passing with Reference to Florida, Per M. Bruun, 146

Oceanography As an Aid to Engineering in Coastal Waters, Gino Mecarini, 195

ESTHETICS

Beauty and the San Mateo Creek Bridge, R. C. Cassano and M. H. Jacobs, 601

Bringing Glamor to Subways, 569

Economy, Efficiency, and Esthetics in Small Concrete Bridges, Arvid Grant, 432

Highway Esthetics, 405

Landscaping Urban Expressways, H. L. Hottenstein, 628

ESTHETICS *Continued*
Urban Freeways: Architects Join in their Design, George A. Elliott, III, 716
Urban Hydrology—A Redirection, D. Earl Jones, 361

ESTIMATES
Books on Estimating and Costs, John W. Breed, 359

ESTUARIES
Classification System for Estuaries, Bard Glenne, 448
Mixing and Dispersion Studies in San Francisco Bay, Thomas E. Bailey, Charles A. McCullough, and Charles G. Gunnerson, 46
Natural Indicators of Estuarine Sediment Movement, John V. Byrne and L. D. Kulm, 449
New Estuarine Measurement Equipment and Techniques, Edmund A. Prych, David W. Hubbell, and Jerry L. Glenn, 125

ETHICS
Administration of Ethical Standards, William H. Wisely, 357
Criticism and the Advancement of Building Engineering, Edward Cohen, 350
How to Publish and Perish, Robert L. Alexander, 332
Negotiating with ASCE Manual 45, N. F. Turner, 398
Worlds of Two Giants, Paul M. Wright, 21

EVAPORATION
Numerical Analysis of Soil-Moisture Systems, Irwin Remson, Alfonso A. Fungaroli, and G. M. Hornberger, 224
Potential Evaporation and River Basin Evaporation, Fred I. Morton, 672

EVAPOTRANSPIRATION
Antecedent Retention Indexes Predict Soil Moisture, Keith E. Saxton and Arno T. Lenz, 607

EXCAVATION
Anticipated Foundation Movement Affects Design, George Evans, 219
New York State's Unique Canal System, Earl Scothon, 330
Placing the Underwater Tubes for BART, 554
Planned Community Development Over Rock, John A. Fichter, 396
Record Tunnel Excavation with Boring Machines, D. E. Cannon, 323
Ten Years of Plowshare, Melvin W. Jackson, 709
Underground Garage Benefits from Innovations, Fritz Kramrisch, 689

EXPLORATION
Mapping the West: 1789–1900, Robert P. Vreeland, 139

EXPLOSIONS
Ten Years of Plowshare, Melvin W. Jackson, 709

EXPOSITIONS (Expo 67)
Engineered Structures at Expo 67, Hal W. Hunt, 310

FABRICATION
Madison Square Garden—Fabrication and Erection of Cable-Supported Roof, J. A. Sterner, 534

FAILURE
Bounds on the Reliability of Structural Systems, C. Allin Cornell, 452
Buckling of Soil-Surrounded Tubes, Ulrich Luscher, 496
Chemical Stabilization of an Active Landslide, Richard L. Handy and Wayne W. Williams, 381
Ductility of Building Frames under Earthquake Loads, Charles Mackintosh, 425
Gas Pipeline Safety by Design, Fred C. Culpepper, Jr., 333
New Concepts in Guardrail Design, Malcolm D. Graham, 291

FASTENERS
A Modern Concept in Timber Truss Design, Edwin L. Morris, 319

FEES
Negotiating with ASCE Manual 45, N. F. Turner, 398
Opportunities for Engineers on Foreign Projects, John Huston, 388

FILTRATION
Diatomite Filtration Equations for Various Septa, James H. Dillingham, John L. Cleasby, and E. Robert Baumann, 58
Prediction of Diatomite Filter Cake Resistance, James H. Dillingham, John L. Cleasby, and E. Robert Baumann, 117
Sand Filtration of Particulate Matter, Eric Davis and Jack A. Borchardt, 503

FINANCING
Engineering for Marine Exploration and Development, Edward Wenk, Jr., 495
Negotiating with ASCE Manual 45, N. F. Turner, 398
Verrazano-Narrows Bridge: Development and Financing Project, Peter J. Reidy, 627

FIRE PROTECTION
Drilled-pier Cofferdam for a Building, Harold Engstrom and Robert Oates, 63
Evolution of the Use of Plywood for Structures, David Countryman, 76
Water-Filled Tubular Steel Columns—Fire Protection without Coating, L. G. Seigel, 639
Wood-Structural Enigma or Engineering Reality, Joseph A. Liska, 156

FLOOD CONTROL
Flood Routing in an Irregular Channel, Alan G. Fletcher and Wallis S. Hamilton, 237

FLOOD CONTROL *Continued*
Harvard Gulch Flood Control Project, Kenneth R. Wright, 45
Hurricane-Flood Protection in the United States, Harry S. Perdikis, 60
Hydrologic Influences of a Flood Control Program, Monroe A. Hartman, William O. Ree, Russell R. Schoof, and Bruce J. Blanchard, 603
Improved Method of Flood Routing, Eugene A. Graves, 379
Inland Delta Building Activity of Kosi River, Chintaman V. Gole and Shrikrishna V. Chitale, 37
Integrated Operation of Reservoirs, Paul H. Berg, 144
Urban Hydrology—A Redirection, D. Earl Jones, 361

FLOODS
Computation of Discharge Including Over-Bank Flow, C. J. Posey, 27
Flood Proofing in a Flood Plain: A Stochastic Model, Viraf S. Bhavnagri and George Bugliarello, 179
Inland Delta Building Activity of Kosi River, Chintaman V. Gole and Shrikrishna V. Chitale, 37
Mud Floods Related to the Irazu Volcano Eruptions, Carlos A. Ulate and Manuel F. Corrales, 107

FLUID FILTERS
Diatomite Filtration Equations for Various Septa, James H. Dillingham, John L. Cleasby, and E. Robert Baumann, 58

FLOORS
Analysis of a Shear Wall Supported by a Beam, A. T. Hinkley, 614

FLUID FILTERS
Grain Size vs Dollars for Drainage Aggregates, Harry R. Cedergren, 608
Observations on Tile Drainage Performance, Arthur F. Pillsbury, 482
Prediction of Diatomite Filter Cake Resistance, James H. Dillingham, John L. Cleasby, and E. Robert Baumann, 117

FLUID FLOW
Darcy Flow Solutions with a Free Surface, Robert L. Taylor and C. B. Brown, 89
Dispersion from Sources in Nonuniform Seepage Flow, Wen-Hsiung Li and Raymond P. Canale, 6
Dispersion in Layered Porous Media, Uri Y. Shamir and Donald R. F. Harleman, 515
Factors Determining the Strength of Secondary Flow, Chao-Lin Chiu, 402
Horizontal Two-Dimensional Density Current, I. R. Wood, 442
Solution of a Diffusion Equation, Rameshwar Singh, 490
Stochastic Model of Motion of Solid Particles, Chao-Lin Chiu, 294
Valve Stroking for Complex Piping Systems, Victor L. Streeter, 98

FLUID MECHANICS
Simple Tools in a World of Computers, Frederick T. Mavis, 161

FLUMES
Resistance Relationships for Alluvial Channel Flow, R. J. Garde and Ranga K. G. Raju, 275

FLY ASH
Grouting a Dam Cutoff in Cavernous Limestone, Leland F. Grant and John S. Winefordner, 706

FOLDED PLATES
Evolution of the Use of Plywood for Structures, David Countryman, 76

FOOTINGS
Three-Dimensional Analysis of Pile Foundations, Rudolf Aschenbrenner, 455
Transient Loading Tests on a Circular Footing, Vincent P. Drnevich and John R. Hall, 49

FORCE
Force-Deflection Relations From Dynamic Tests, Paul C. Jennings, 193

FORECASTING
Estimating Urban Trip Production and Attraction, Peter S. Parsonson and Paul D. Cribbins, 650
Prediction of Diatomite Filter Cake Resistance, James H. Dillingham, John L. Cleasby, and E. Robert Baumann, 117

FOREIGN ENGINEERING
Earth Dams—Design As You Build, C. Y. Li, 77
Foreign Jobs—How to Locate, Apply and Quality for them, John Huston, 634
Holland—Between River and Sea, David P. Billington, 417
Launcher Erects Post-Tensioned Girders in Boliva, Paul Stergiou, 383
Opportunities for Engineers on Foreign Projects, John Huston, 388
Pongolapoort Dam for South African Irrigation, Gerhard Everwyn, 686
San Francisco's Solid Wastes Crisis, Frank P. Sebastian, 571
Tunneling on London's Victoria Line Underground Railway, George S. Dodds, 113
Venezuela—Suspension Bridge Spans the Orinoco, Paul Lustgarten, 400

FORMWORK (Construction)
Beauty and the San Mateo Creek Bridge, R. C. Cassano and M. H. Jacobs, 601
How the California Water Project Endeavors to Get Uniformly Excellent Concrete, Lewis H. Tuthill, 421
New Medical Building Uses Precast Concrete, Frank Porter and Elmo Marker, 325

FOUNDATIONS

Anticipated Foundation Movement Affects Design, George Evans, 219

Beam on Tensionless Foundation, N. C. Tsai and Russell A. Westmann, 652

Bulkhead and Excavation Bracing Failures, George B. Sowers and George F. Sowers, 71

Chemical Stabilization of an Active Landslide, Richard L. Handy, and Wayne W. Williams, 381

Cracked Pavement Slabs With Nonuniform Support, William R. Hudson and Hudson Matlock, 104

Distribution of Soil Pressures on Concrete Pipe, Howard C. Pettibone and Amster K. Howard, 180

Earth Movement at Baldwin Hills Reservoir, Robert B. Jansen, Gordon W. Dukleth, Bernard B. Gordon, Laurence B. James, and Clyde E. Shields, 403

Electro-osmotic Stabilization of West Branch Dam, Claude A. Fetzer, 540

Finite Beams on Elastic Foundations, Constancio Miranda and Keshavan Nair, 666

Foundation Clay Shrinkage Caused by Large Trees, Mark J. Hammer and Orville B. Thompson, 86

Grouting a Dam Cutoff in Cavernous Limestone, Leland F. Grant and John S. Winefordner, 706

Highway Construction in Alaska, Donald E. Stein, 587

Innovations in the Laying and Bedding of Pipe, D. L. Chappelear and E. L. Gloyna, 692

NCEL's Ocean Engineering Program, 102

Piezometers Monitor Waterfront Fill, William H. Griffin, 440

Pile Foundation for Oakland Coliseum, John J. Hallenbeck, Jr., and Robert E. Johnston, 210

Piling Difficulties in the New York Area, James D. Parsons, 707

Replacing East Canyon Dam While Operations Continue, Merlin D. Copen and Ernest A. Lindholm, 100

Replica Modeling in Soil Dynamics, Peter S. Westine, 518

Role of the 'Calculated Risk' in Earthwork and Foundation Engineering, Arthur Casagrande, 530

Slurry-Trench Techniques in Deep Foundation Construction, Ben C. Gerwick, Jr., 704

Stability of Atchafalaya Levees, Robert I. Kaufman and Frank J. Weaver, 235

Static Penetrometers for Soil Exploration, John H. Schmertmann, 326

Student Research on Building Foundations, T. William Lambe, 543

Three-Dimensional Analysis of Pile Foundations, Rudolf Aschenbrenner, 455

Underground Garage Benefits from Innovations, Fritz Kramrisch, 689

Verrazano-Narrows Bridge: Construction of Tower Foundations and Anchorages, Nomer Gray and George H. Decancq, 659

FRAMES

Analysis of Vierendeel Truss with Inclined Chords, Hsien-San Tsang, 463

Collapse and Shakedown Loads of Plane Frames, J. Michael Davies, 528

Design of Cable Roof for Madison Square Garden, Fred Fischer, Jr., 355

Ductility of Building Frames under Earthquake Loads, Charles Mackintosh, 425

Dynamic Influence Lines of Beams and Frames, Fernando Venancio Filho, 444

Inelastic Buckling and Sidesway of Concrete Frames, Wen F. Chang, 606

Minimum Cost Design of Frames, R. A. Ridha and R. N. Wright, 507

Snap-Through Buckling of Framed Triangulated Domes, Rodolfo J. Aguilar, 329

Structural Timber Framing in Forest Products Laboratory, Maurice J. Rhude, 376

FRICTION

Water-Hammer Charts Including Fluid Friction, David Stephenson, 215

GARAGES

Underground Garage Benefits from Innovations, Fritz Kramrisch, 689

GATES

Holland—Between River and Sea, David P. Billington, 417

GEOLOGY

Construction of Morrow Point Power Plant and Dam, James D. Seery, 3

Design and Construction Features: Boundary Project, H. V. Strandberg, 660

GIRDERS

Launcher Erects Post-Tensioned Girders in Bolivia, Paul Stergiou, 000

A Prestressed, Lightweight Concrete Bridge Spans 131 ft, George Laszlo, 126

Strength of Longitudinally Stiffened Plate Girders, Peter B. Cooper, 484

Torsional Response of Tapered I-Girders, George C. Lee and Barna A. Szabo, 597

GLUING

Structural Timber Framing in Forest Products Laboratory, Maurice J. Rhude, 376

GOVERNMENT

Challenges to Registration of Engineers, Arthur R. Watson, 579

European Practice in Water Quality Control, Walter A. Lyon, 227

Foreign Jobs—How to Locate, Apply and Qualify for them, John Huston, 634

Highways Designed for Safety, 625

Ocean Engineering—Background and Prospects, Hubert H. Humphrey, 119

Opportunities for Engineers on Foreign Projects, John Huston, 388

GOVERNMENT *Continued*
Role of Government in Water Resource Development, Ayers Brinser, 318
Role of the City Engineer in Urban Planning, Douglas W. Talbot, 654

GRAPHS (Charts)
Analyses of Parameters of an Unconfined Aquifer, George J. Kriz, Verne H. Scott, and Robert H. Burgy, 199
Analysis of Data from Stepwise Throttled Pump Test, Gert Aron and Verne H. Scott, 136
Dimensionless Parameters for Homogeneous Earth Slopes, James M. Bell, 521
Graphical Comparison of Uniform Flow in Open Channels, Paul Cella, 341
Graphs for Locating the Line of Seepage in an Earth Dam, M. R. Carstens with George D. May, 328
Water-Hammer Charts Including Fluid Friction, David Stephenson, 215

GRAVEL
Grain Size vs Dollars for Drainage Aggregates, Harry R. Cedergren, 608
Stable Channels with Gravel-Paved Beds, Rolf Kellerhals, 473

GROUND WATER
Analyses of Parameters of an Unconfined Aquifer, George J. Kriz, Verne H. Scott, and Robert H. Burgy, 199
Coastal Parallel Canals with Intermediate Drains, Srisakdi Charmonman, 223
Dispersion from Sources in Nonuniform Seepage Flow, Wen-Hsiung Li and Raymond P. Canale, 6
Dispersion in Layered Porous Media, Uri Y. Shamir and Donald R. F. Harleman, 515
Double Slope Method for Pumping Test Analysis, Kamal F. Saad, Ahmed Shukry, and Aly Baligh, 688
Drainage by Pumped Wells in Welton-Mohawk District, Theodore H. Moser, 486
Economics of Ground-Water Recharge, David K. Todd, 695
Grain Size vs Dollars for Drainage Aggregates, Harry R. Cedergren, 608
Kaweah River Water Rights Settlement by Purchase, Stanley M. Barnes, 34
Numerical Analysis of Soil-Moisture Systems, Irwin Remson, Alfonso A. Fungaroli, and G. M. Hornberger, 224
Pipe Joints Limit Infiltration, George W. Clark, Jr., with Martin L. Leyrer, 83
Precipitation of Iron in Aerated Ground Waters, Mriganka M. Ghosh, John T. O'Connor, and R. S. Engelbrecht, 653
Research Guidelines to Sound Watershed Development, Roland R. Renne, 465
Steady-State Theories for Drainage, Don Kirkham, 656
Stream-Aquifer System Analysis, Ali Eshett and Morton W. Bittinger, 628
Transient Solutions for Drainage of Sloping Land, J. N. Luthin and J. C. Guitjens, 510

GROUTING
Construction of Morrow Point Power Plant and Dam, James D. Seery, 3
Grouting a Dam Cutoff in Cavernous Limestone, Leland F. Grant and John S. Winefordner, 706
Innovations in the Laying and Bedding of Pipe, D. L. Chappelear and E. L. Gloyna, 692

GUARDRAILS
New Concepts in Guardrail Design, Malcolm D. Graham, 291

HARBOR FACILITIES
Optimum Size Seaport, Carl H. Plumlee, 157

HARBORS
Abstracts of Papers, Tenth Conference on Coastal Engineering, Coastal Engineering Research Council, Waterways and Harbors Division, ASCE, M. P. O'Brien, Chmn., 642
Directional Spectra of Laboratory Wind Waves, Ismail El-Sayed Mobarek, 681
Eight-Berth Marine Terminal in Deep Bay Mud, Eugene L. Sembler, 523
Hurricane-Flood Protection in the United States, Harry S. Perdikis, 60
Navy Anniversary—CEC and the Seabees, 316
Ocean Wave Force Instrumentation, Thomas L. Russell, Volkmar Schoettle, and Robert G. Chown, 491
Proceedings of Tenth Conference on Coastal Engineering—1966, 688
Shallow Water Waves in Canals of Variable Section, E. V. Laitone, 87
Wave Forces on Piling for Narrow-Band Spectra, Leon Emry Borgman, 349
Wave Statistics from Hurricane Dora, J. Ian Collins, 163

HIGHWAYS
Break-Away Sign Supports Enhance Highway Safety, Charles J. Keese, et al., 164
Cement Stabilization of Volcanic Materials, Roland A. Pettitt, 588
Cement-Treated Subbase Practice in U.S. and Canada, Edward L. Kawala, 443
Cracked Pavement Slabs With Nonuniform Support, William R. Hudson and Hudson Matlock, 104
Deficiencies of Urban Transportation Studies, Roy E. Jorgensen, 682
Economy of Corrosion-Resistant Steel in Highway Bridges, John M. Hayes and Samuel P. Maggard, 81
Estimating Urban Trip Production and Attraction, Peter S. Parsonson and Paul D. Cribbins, 650
Expansive Cements in the United States, Philip W. Gutmann, 595

HIGHWAYS *Continued*
Fatigue Characteristics of Flexible Pavement, Hyoungkey Hong, 365
Freeway Planning in Dallas County, Texas, Arthur F. Beck, 14
Get Me to the Airport on Time, Roger H. Gilman, 420
Grain Size vs Dollars for Drainage Aggregates, Harry R. Cedergren, 608
Highway Construction in Alaska, Donald E. Stein, 587
Highway Esthetics, 405
Highway Safety Elements in Aesthetic Design, James A. Head, 190
Highways Designed for Safety, 625
Keeping Afloat on the Fact Flood, W. N. Carey, 335
Landscaping Urban Expressways, H. L. Hottenstein, 628
Meeting Future Surface Transportation Needs, Marshall F. Reed, Jr., 675
Minor Concessions to Contractors Produce More Economical Concrete Pavements, Harold J. Halm, 619
New Concepts in Guardrail Design, Malcolm D. Graham, 291
Urban Freeways: Architects Join in Their Design, George A. Elliott, III, 716
Urban Transportation Research, Charles M. Haar, 642

HISTORY
Civil Engineering—Its History, George F. Branigan, 297
Mapping the West: 1789–1900, Robert P. Vreeland, 139
Navy Anniversary—CEC and the Seabees, 316
New York State's Unique Canal System, Earl Scothon, 330

HOT WIRE ANEMOMETERS
Flow Direction Measurement by Hot-Wire Anemometry, J. W. Delleur, 182

HURRICANES
Wave Statistics from Hurricane Dora, J. Ian Collins, 163

HYDRAULIC JUMP
Dividing Flow in an Open Channel, Shiu Wai Law and Alan J. Reynolds, 130

HYDRAULICS
Analog Modeling the California Delta System, James A. Harder and John O. Nelson, 702
Analyses of Parameters of an Unconfined Aquifer, George J. Kriz, Verne H. Scott, and Robert H. Burgy, 199
Analysis of Data from Stepwise Throttled Pump Test, Gert Aron and Verne H. Scott, 136
Antecedent Retention Indexes Predict Soil Moisture, Keith E. Saxton and Arno T. Lenz, 607
Bed-Load Transport at High Shear Stress, Kenneth C. Wilson, 410
Characteristics of M1 Backwater Curves, Nagar S. Lakshmana Rao and K. Sridharan, 224
Coastal Parallel Canals with Intermediate Drains, Srisakdi Charmonman, 223
Computation of Discharge Including Over-Bank Flow, C. J. Posey, 27
Darcy Flow Solutions with a Free Surface, Robert L. Taylor and C. B. Brown, 89
Diffusion of Sediment in a Submerged Jet, Surya Rao Singamsetti, 228
Dispersion from Sources in Nonuniform Seepage Flow, Wen-Hsiung Li and Raymond P. Canale, 6
Dispersion in Layered Porous Media, Uri Y. Shamir and Donald R. F. Harleman, 515
Distribution of Head at a Rectangular Conduit Outlet, Satya Prakash Garg, 703
Distribution System Equalizing Storage Hydraulics, M. B. McPherson and R. Prasad, 207
Dividing Flow in an Open Channel, Shiu Wai Law and Alan J. Reynolds, 130
Drop-Box Weir for Sediment-Laden Flow Measurement, Clifton W. Johnson, Howard D. Copp, and Roy E. Tinney, 52
Economics of Ground-Water Recharge, David K. Todd, 695
Effect of Pipe Boundary on Hood Inlet Performance, Charles E. Rice, 358
Evaluation of Hydraulic Efficiency of Sedimentation Basins, M. Rebhun and Y. Argaman, 721
Evaluation of Pipe Elbows as Flow Meters, John A. Replogle, Lloyd E. Myers, and Kenneth J. Brust, 373
Experimental and Numerical Study of Column Drainage, Keith K. Watson, 167
Experimental Study of Two-Layered Flow Through a Sink, D. Grant Huber and T. L. Reid, 615
Experiments on Lateral Dispersion in Porous Media, Wen-Hsiung Li and Fu-Hsiung Lai, 74
Factors Determining the Strength of Secondary Flow, Chao-Lin Chiu, 402
Flood Proofing in a Flood Plain: A Stochastic Model, Viraf S. Bhavnagri and George Bugliarello, 179
Flood Routing in an Irregular Channel, Alan G. Fletcher and Wallis S. Hamilton, 237
Flow Equation for the Sluice Gate, Nallamuthu Rajaratnam and K. Subramanya, 408
Flow Measurements with Fluorescent Tracers, John A. Replogle, Lloyd E. Myers, and Kenneth J. Brust, 28
Fluctuation of Pressure in Conduit Expansions, Hunter Rouse and Vladimir Jezdinsky, 191
Horizontal Two-Dimensional Density Current, I. R. Wood, 442
Hydraulic Efficiency in Culvert Design, Fred W. Blaisdell, 57
Hydrologic Influences of a Flood Control Program, Monroe A. Hartman, William O. Ree, Russell R. Schoof, and Bruce J. Blanchard, 603
Hydro Machinery Laboratory, Maurice L. Albertson and J. Paul Tullis, 684

HYDRAULICS *Continued*
Improved Method of Flood Routing, Eugene A. Graves, 379
Inland Delta Building Activity of Kosi River, Chintaman V. Gole and Shrikrishna V. Chitale, 37
International Hydrological Decade Program Abroad, Raymond L. Nace, 187
Loop Systems for Measuring Sand-Water Mixtures, Hans A. Einstein and Walter H. Graf, 678
Mathematical Models of Catchment Behavior, David R. Dawdy and Terence O'Donnell, 593
Mud Floods Related to the Irazu Volcano Eruptions, Carlos A. Ulate and Manuel F. Corrales, 107
New Estuarine Measurement Equipment and Techniques, Edmund A. Prych, David W. Hubbell, and Jerry L. Glenn, 125
Numerical Analysis of Soil-Moisture Systems, Irwin Remson, Alfonso A. Fungaroli, and G. M. Hornberger, 224
Potential Evaporation and River Basin Evaporation, Fred I. Morton, 672
Pressure Pulsations in Flow Through Branched Pipes, David L. Appel and Yun-Sheng Yu, 612
Red Water in South Bend, Phillip Moses, 386
Resistance Relationships for Alluvial Channel Flow, R. J. Garde and Ranga K. G. Raju, 275
Role of Government in Water Resource Development, Ayers Brinser, 318
Scale Model of Urban Runoff From Storm Rainfall, Robert A. Grace and Peter S. Eagleson, 573
Secondary Currents in a Corner, James A. Liggett, Chao-Lin Chiu, and Ling S. Mioa, 115
Sedimentation Research Needs in Semiarid Regions, Kenneth G. Renard and Robert B. Hickok, 279
Similarity Laws for Localized Scour, Marion R. Carstens, 62
Similitude Problems in Building Aerodynamics, Hans J. Leutheusser and W. Douglas Baines, 630
Solution of a Diffusion Equation, Rameshwar Singh, 490
Spectral Analysis of Sand Waves, Carl F. Nordin, Jr. and James H. Algert, 586
Stable Channels with Gravel-Paved Beds, Rolf Kellerhals, 473
Stochastic Model of Motion of Solid Particles, Chao-Lin Chiu, 294
Stream-Aquifer System Analysis, Ali Eshett and Morton W. Bittinger, 628
Valve Stroking for Complex Piping Systems, Victor L. Streeter, 98
Wastewater Recharge and Dispersion in Porous Media, John A. Hoopes and Donald R. F. Harleman, 460
Waterhammer Analysis by Analog Computers, Don J. Wood, 235
Water-Hammer Charts Including Fluid Friction, David Stephenson, 215
Water Resources Site Preservation on Federal Lands, Kenneth W. Sax, 372

HYDRODYNAMICS
Hydro Machinery Laboratory, Maurice L. Albertson and J. Paul Tullis, 684

HYDROELECTRIC POWER GENERATION
Advance Planning Speeds Construction of Mossyrock Dam, Charles O. Faris, 631
Hydropower Developments in India, Asit K. Biswas, 48
Hydro Project Formulation: Results in the Southeast, Henry C. C. Weinkaff and Clement P. Lindner, 677
Power Generation—Its Status and Outlook, J. George Thon, 641
Sidestream Intakes for Hydro Power in Scotland, Edgar Burke Wilson and John Alexander Stevenson, 522
Steels for Hydroelectric Applications, J. L. Fox, 636

HYDROGRAPHY
Classification System for Estuaries, Bard Glenne, 448
Holland—Between River and Sea, David P. Billington, 417

HYDROLOGY
Antecedent Retention Indexes Predict Soil Moisture, Keith E. Saxton and Arno T. Lenz, 607
Experimental and Numerical Study of Column Drainage, Keith K. Watson, 167
Hydrologic Characteristics of Soil Types, Heggie N. Holtan, Charles B. England, and Donald E. Whelan, 479
Hydrologic Influences of a Flood Control Program, Monroe A. Hartman, William O. Ree, Russell R. Schoof, and Bruce J. Blanchard, 603
Hydrology of Water Quality Dilution Requirements, Malcolm F. Kallus and Jack W. Keeley, 214
Improved Method of Flood Routing, Eugene A. Graves, 379
International Hydrological Decade Program Abroad, Raymond L. Nace, 187
Mathematical Models of Catchment Behavior, David R. Dawdy and Terence O'Donnell, 593
Mud Floods Related to the Irazu Volcano Eruptions, Carlos A. Ulate and Manuel F. Corrales, 107
New Estuarine Measurement Equipment and Techniques, Edmund A. Prych, David W. Hubbell, and Jerry L. Glenn, 125
Numerical Analysis of Soil-Moisture Systems, Irwin Remson, Alfonso A. Fungaroli, and G. M. Hornberger, 224
Potential Evaporation and River Basin Evaporation, Fred I. Morton, 672
Scale Model of Urban Runoff From Storm Rainfall, Robert A. Grace and Peter S. Eagleson, 573
Sedimentation Research Needs in Semiarid Regions, Kenneth G. Renard and Robert B. Hickok, 279

ILLUMINATION
Advance Planning Speeds Construction of Mossyrock Dam, Charles O. Faris, 631

INCINERATORS
San Francisco's Solid Wastes Crisis, Frank P. Sebastian, 571

INDIA
Hydropower Developments in India, Asit K. Biswas, 48
Inland Delta Building Activity of Kosi River, Chintaman V. Gole and Shrikrishnan V. Chitale, 37

INDUSTRIAL PARKS
Planning the Flatlands Urban Industrial Park, Albert T. Rosselli, 563

INDUSTRIAL WASTES
The Battle to Save Lake Michigan, H. W. Poston, 725
Getting More for the Water-Pollution Control Dollar, Richard Hazen, 722

INFILTRATION
Antecedent Retention Indexes Predict Soil Moisture, Keith E. Saxton and Arno T. Lenz, 607

INFLUENCE LINES
Dynamic Influence Lines of Beams and Frames, Fernando Venancio Filho, 444
General Method for Beams on Elastic Supports, Ralph R. Mozingo, 472

INFORMATION RETRIEVAL
Keeping Afloat on the Fact Flood, W. N. Carey, Jr., 335

INSPECTION
AITC Quality Control of Glued Laminated Timbers, Thomas E. Brassell, 639
American Lumber Standards Committee, James H. Carr, Jr., 116
Asphalt Paving for a New Airport in Alabama, Reginald Kerlin, 599
Earthquake Requirements in Building Codes, Melvin W. Jackson, 427
The Legal Implications of Quality Control, Donald McL. Davidson, 612
A New Concept of Civil Engineering Technology, Maynard Nugent, 133
Programming Structural Integrity Maintenance, Lawrence L. Smith, 560
Worlds of Two Giants, Paul M. Wright, 21

INSTRUMENTS
Airport Take-off and Landing Paths, Frederic T. Mavis and Charles F. Peck, Jr., 216
Air Research Monitoring Station System, William T. Ingram, Conrad Simon, and James R. McCarroll, 33
Arching for Vertically Buried Prismatic Structures, Phillip A. Abbott, 488
Bibliography on Thermal Pollution: Report by the Committee on Thermal Pollution, Sanitary Engineering Division, ASCE, 597
Ignition Noise in Neutron Moisture Gages, John F. Stone, A. Dudley Barefoot, and James E. Garton, 480
Performance of El Infiernillo Dam, 1963–1966, Raul J. Marsal and Luis Ramirez de Arellano, 189
Stability of Atchafalaya Levees, Robert I. Kaufman and Frank J. Weaver, 235

INTERNATIONAL HYDROLOGICAL DECADE
International Hydrological Decade Program Abroad, Raymond L. Nace, 187

IRON
Red Water in South Bend, Phillip Moses, 386

IRRIGATION
Design of Desilting Works for Irrigation Systems, Floyd E. Dominy, 390
Evaluation of Pipe Elbows as Flow Meters, John A. Replogle, Lloyd E. Myers, and Kenneth J. Brust, 373
Evolution of Uses of Cloud-Seeding Technology, Richard A. Schleusener, 476
Federal Versus State Interests in Water Development, Harvey O. Banks, 683
Flow Equation for the Sluice Gate, Nallamuthu Rajaratnam and K. Subramanya, 408
Hydrologic Characteristics of Soil Types, Heggie N. Holtan, Charles B. England, and Donald E. Whelan, 479
Integrated Operation of Reservoirs, Paul H. Berg, 144
Kaweah River Water Rights Settlement by Purchase, Stanley M. Barnes, 34
Proposed Project for a Salinity Problem at Abadan, M. B. Gholizadeh and Albert T. Petersen, 12
Relationships Among Sprinkler Uniformity Measures, Jack G. Beale and David T. Howell, 657
Research Guidelines to Sound Watershed Development, Roland R. Renne, 465

JETTIES
Planning and Design of a Low-Weir Section Jetty, Nels C. Magnuson, 23

JOINTS (Junctions)
Bearing-Type Bolted Hybrid Joints, Robert Kormanik and John W. Fisher, 661
Behavior of Splices in Beam-Column Connections, Joseph P. Colaco and Chester P. Siess, 562
Bibliography on Bolted and Riveted Joints, Prepared by the Task Committee on Structural Connections of the Committee on Metals of the Structural Division, ASCE, and the Research Council on Riveted and Bolted Structural Joints. ASCE—Manuals and Reports on Engineering Practice—No. 48, 658

JOINTS (Junctions) *Continued*
Commentary on Welded Cover-Plated Beams, Report of the Subcommittee on Cover Plates, Task Committee on Flexural Members, Structural Division, ASCE, John W. Fisher, Chmn., 594
Concrete Patching on a Runway, 624
Framing Connections for Square Structural Tubing, Richard N. White and Pen Jeng Fang, 415
Pipe Joints Limit Infiltration, George W. Clark, Jr., and Martin L. Leyrer, 83
Placing Pipeline and Outfalls Under Water, Ark G. Chin and Martin C. Dirks, 700
Plastic Hinging In Reinforced Concrete, Ned H. Burns and Chester P. Siess, 44
Waterproofing a Tunnel Under a Canal, Sami Tibshirani, 406

JUNCTIONS
Dividing Flow in an Open Channel, Shiu Wai Law and Alan J. Reynolds, 130

KAWEAH RIVER
Kaweah River Water Rights Settlement by Purchase, Stanley M. Barnes, 34

LABORATORIES
Datalink: A Structural Laboratory Data System, William A. Litle, 525
Hydro Machinery Laboratory, Maurice L. Albertson and J. Paul Tullis, 684

LAND RECLAMATION
Pongolapoort Dam for South African Irrigation, Gerhard Everwyn, 686

LANDSLIDES
Chemical Stabilization of an Active Landslide, Richard L. Handy and Wayne W. Williams, 381
Stability of Natural Slopes, Ralph B. Peck, 213

LAND USE
Estimating Urban Trip Production and Attraction, Peter S. Parsonson and Paul D. Cribbins, 650
Water Resources Site Preservation on Federal Lands, Kenneth W. Sax, 372

LAND USE ZONING
Planning the Flatlands Urban Industrial Park, Albert T. Rosselli, 563

LASERS
Precision Alignment Systems, Kale Skutley, 616

LAW (Jurisprudence)
The Legal Implications of Quality Control, Donald McL. Davidson, 612

LEGISLATION
Aesthetic Considerations in City Construction, Vernon F. Jorgensen, 644
Building Codes, William H. Correale, 141
Challenges to Registration of Engineers, Arthur R. Watson, 579
European Practice in Water Quality Control, Walter A. Lyon, 227
Federal Versus State Interests in Water Development, Harvey O. Banks, 683
The Legal Implications of Quality Control, Donald McL. Davidson, 612
Water Resources Site Preservation on Federal Lands, Kenneth W. Sax, 372

LICENSES
Challenges to Registration of Engineers, Arthur R. Watson, 579

LIMIT DESIGN METHOD (Structural)
Limit Design by Successive Moment Distribution, Carl Berwanger, 646
Rotational Capacity of Reinforced Concrete Beams, W. Gene Corley, 451

LOADS (Forces)
Analysis of Beams and Plates for Ponding Loads, Ahmed E. Salama and Martin L. Moody, 514
Analysis of Laterally-Loaded Continuous Curved Beams, Muppidi N. Reddy and Jan J. Tuma, 623
Arching for Vertically Buried Prismatic Structures, Phillip A. Abbott, 488
Bending of Parallelogram Plates, B. D. Aggarwala, 309
Design of Cable Roof for Madison Square Garden, Fred Fischer, Jr., 355
Edge Load Solutions for Conical Shells, Jack R. Vinson, 714
Flexibility in Cylinder Groups Oscillated in Water, Alan D. K. Laird, 36
Inelastic Response of Beams to Moving Loads, Teoktistos G. Toridis and Robert K. Wen, 31
Moments in Buried Box Culverts, P. C. Dave, 564
Transient Loading Tests on a Circular Footing, Vincent P. Drnevich and John R. Hall, 49
Web Crippling Tests on Hybrid Beams, Charles G. Schilling, 237

LOCKS (Waterways)
Experimental Research on Lock Hydraulic Systems, John P. Davis and Thomas E. Murphy, 712
A Navigation Lock That is Also a Spillway, Anton M. Grzywienski, 313

MAINTENANCE
Bridge Resurfaced With Epoxy Mortar, Paul C. Perry III, 610
Equipment Replacement Decisions, John W. Alltucker, 202
The First Hot-Dip Galvanized Bridge in the U.S., Frank J. Brechting, Jr., 575

MAINTENANCE *Continued*
Internal Sand Cleaning of Pipelines, Robert A. Jenkins, 656
New Deck Appeases Bridge of the Gods, N. W. Haner, 605
Programming Structural Integrity Maintenance, Lawrence L. Smith, 560
Restoring Salt-Damaged Highway Bridges, Robert J. Walsh, 429

MANAGEMENT
Economics of Ground-Water Recharge, David K. Todd, 695
Evolution of Uses of Cloud-Seeding Technology, Richard A. Schleusener, 476
Programming Structural Integrity Maintenance, Lawrence L. Smith, 560
Regional Solid Wastes Management, Lawrence W. Bremser, 559
Role of Government in Water Resource Development, Ayers Brinser, 318
Scope of the Solid Waste Problem, Wesley E. Gilbertson, 668
Stream-Aquifer System Analysis, Ali Eshett and Morton W. Bittinger, 628

MANAGEMENT SYSTEMS
The Ruhr and the Delaware, Allen V. Kneese, 200

MAPPING
A Civil Engineer Looks at Surveying Education, Peter A. Machinis, 56
Inadequate Surveys: Economic and Legal Consequences, Joseph C. Whiteman, 56
Mapping the West: 1789–1900, Robert P. Vreeland, 139
Oceanography As An Aid to Engineering In Coastal Waters, Gino Mecarini, 195
Photo Maps for Engineering Use, Richard O. Mahan, 338

MARINAS
Diffraction of Ocean Waves About a Breakwater, Charles T. Morrow, 454
Timber in Marine Structures, James R. Ayers and Ralph C. Stokes, 153

MATERIALS
Corner Properties of Cold-formed Steel Shapes, Kenneth W. Karren, 458
Earthquake Requirements in Building Codes, Melvin W. Jackson, 427
Materials Control and Test Procedures, Robert F. Baker, 17
Neoprene Elastomer Bearings—Ten Years Experience Proves Their Importance, Robert Lee Pare, 591
Structural Metal Composites, Russel C. Jones, 50
Sulphur-Aggregate Concrete, John M. Dale and Allen C. Ludwig, 698

MATERIALS TESTS
Break-Away Sign Supports Enhance Highway Safety, Charles J. Keese, et al., 164
Hydro Machinery Laboratory, Maurice L. Albertson and J. Paul Tullis, 684
Materials Control and Test Procedures, Robert F. Baker, 17
Plastic Pipe—A Progress Report, Jack W. Pierce, 307
Steel and Corrosion—Some Methods of Protection, Ronald A. Antonio, 170
Steels for Hydroelectric Applications, J. L. Fox, 636

MATHEMATICS
Dynamic Analysis of Rings by Finite Differences, Robert E. Ball, 90
Homologous Deformations of Tiltable Telescopes, Sebastian von Hoerner, 567
Steady Drainage of Two-Layered Soil, Gedeon Dagan, 638

MATRICES (mathematics)
Analysis of Laminated Shells of Revolution, Stanley B. Dong, 110
Analysis of Vierendeel Truss with Inclined Chords, Hsien-San Tsang, 463
Aseismic Design of Multistory Systems, E. F. Kokinopoulos, 301
Behavior of Elastic Plastic Trusses with Unstable Bars, Giulio Maier, 73
Compact Solution of Doubly-Curved Shell Equation, Graham H. Powell, 618
Computer Analysis of Plane and Space Structures, Semih S. Tezcan, 667
Computer Analysis of the F-111 Wing Assembly, Joseph Antebi, Edwin C. Rossow, Indravadan K. Shah, and Jayant M. Shah, 30
Effect of Foreign Inclusions on Properties of Solids, Longin B. Greszczuk, 516
General Method for Beams on Elastic Supports, Ralph R. Mozingo, 472
General Theory of Cyclically Symmetric Frames, M. J. L. Hussey, 589
Homologous Deformations of Tiltable Telescopes, Sebastian von Hoerner, 567
Ill-Conditioned Stiffness Matrices, Jayant M. Shah, 69
Machine Computation of Trigonometric Functions, David Bushnell and Wayne A. Madsen, 99
POST: Problem-Oriented Subroutine Translator, John W. Melin, 198
Stability of Rigid Frames with Nonuniform Members, Chu-Kia Wang, 456
Three-Dimensional Analysis of Tier Buildings, William Weaver, Jr. and Mark F. Nelson, 169
Uncoupling Method for Diagonal-Band-Matrix Equation, Huang Chao, 346

MEASUREMENT
Computation of Discharge Including Over-Bank Flow, C. J. Posey, 27

MEASUREMENT *Continued*
investigation of Ship-Generated Waves, Robert M. Sorensen, 550

MEASURING INSTRUMENTS
Behavior of a Soil Mass Under Dynamic Loading, R. W. Sparrow and A. C. Tory, 32
Consolidation of Slightly Overconsolidated Soils, Gerald Patrick Raymond, 124
Design of a Differential Pore Pressure and Its Time Lag Characteristics, Jagdish Narain and Bhawani Singh, 105
Flow Direction Measurement by Hot-Wire Anemometry, J. W. Delleur, 182
Flow Measurements with Fluorescent Tracers, John A. Replogle, Lloyd E. Myers, and Kenneth J. Brust, 28
Ignition Noise in Neutron Moisture Gages, John F. Stone, A. Dudley Barefoot, and James E. Garton, 480
Mapping the West: 1789–1900, Robert P. Vreeland, 139
New Estuarine Measurement Equipment and Techniques, Edmund A. Prych, David W. Hubbell, and Jerry L. Glenn, 125
Ocean Wave Force Instrumentation, Thomas L. Russell, Volkmar Schoettle, and Robert G. Chown, 491
Piezometers Monitor Waterfront Fill, William H. Griffin, 000
Precision Alignment Systems, Kale Skutley, 616
Student Research on Building Foundations, T. William Lambe, 543

MECHANICS
Three-Dimensional Suspension Structures, Charles H. Thornton and Charles Birnstiel, 92

MEMBRANES
Seepage Prevention with Impermeable Membranes, Charles E. Staff, 277

METALS
Steels for Hydroelectric Applications, J. L. Fox, 636
Structural Metal Composites, Russel C. Jones, 50

METEOROLOGY
Atmospheric Sciences and the Engineer, Earl G. Droessler, 154

METRIC SYSTEM
Steel Bar Weights in Metric Units, Oluf A. Pedersen, 232

MILITARY ENGINEERING
Navy Anniversary—CEC and the Seabees, 316

MINING
Ten Years of Plowshare, Melvin W. Jackson, 709

MODELS
Aseismic Design of Multistory Systems, E. F. Kokinopoulos, 301
Buckling of Cylindrical Shells under Axial Compression, A. N. Sherbourne and R. M. Korol, 584
Datalink: A Structural Laboratory Data System, William A. Litle, 525
Deflection of Multilayer Soil Systems, K. Ueshita and George G. Meyerhof, 493
Effect of Boundary Conditions on Shell Buckling, Leon R. L. Wang, L. Rodriquez-Agrait, and William A. Litle, 16
Effect of Pipe Boundary on Hood Inlet Performance, Charles E. Rice, 358
Experimental Research on Lock Hydraulic Systems, John P. Davis and Thomas E. Murphy, 712
Flood Proofing in a Flood Plain: A Stochastic Model, Viraf S. Bhavnagri and George Bugliarello, 179
Flood Routing in an Irregular Channel, Alan G. Fletcher and Wallis S. Hamilton, 237
Force-Deflection Relations From Dynamic Tests, Paul C. Jennings, 193
Mixing and Dispersion Studies in San Francisco Bay, Thomas E. Bailey, Charles A. McCullough, and Charles G. Gunnerson, 46
Model for Compression of Elastic-Plastic Cylinders, R. M. Korol and A. N. Sherbourne, 557
Model Studies of Wind Loads on Flat-Top Cylinders, D. M. Purdy, F. J. Maher, and Daniel Frederick, 282
Model Study of Dynamically Loaded Arch Structures, Don R. Denton and William J. Flathau, 669
Replica Modeling in Soil Dynamics, Peter S. Westine, 518
Scale Model of Urban Runoff From Storm Rainfall, Robert A. Grace and Peter S. Eagleson, 573
Similitude Problems in Building Aerodynamics, Hans J. Leutheusser and W. Douglas Baines, 630
Spectral Analysis of Sand Waves, Carl F. Nordin, Jr. and James H. Algert, 586
Stochastic Model for BOD and DO in Streams, Richard P. Thayer and Richard G. Krutchkoff, 347
Stochastic Model of Motion of Solid Particles, Chao-Lin Chiu, 294
Study of Stability in the Hyperbolic Paraboloid, Kenneth M. Leet, 664
Transient Solutions for Drainage of Sloping Land, J. N. Luthin and J. C. Guitjens, 510
Wastewater Recharge and Dispersion in Porous Media, John A. Hoopes and Donald R. F. Harleman, 460

MOMENT DISTRIBUTION
Limit Design by Successive Moment Distribution, Carl Berwanger, 646

MOMENTS
Analysis of Laterally-Loaded Continuous Curved Beams, Muppidi N. Reddy and Jan J. Tuma, 623
Moments in Buried Box Culverts, P. C. Dave, 564

MONORAIL RAILWAYS
Engineered Structures at Expo 67, Hal W. Hunt, 310

MUNICIPAL ENGINEERING
The Many Facets of Community Planning, William H. Wisely, 5
Role of the City Engineer in Urban Planning, Douglas W. Talbot, 654
Urban Transportation Research, Charles M. Haar, 642

NAVIGATION
Planning and Design of a Low-Weir Section Jetty, Nels C. Magnuson, 23

NEW YORK CITY
Piling Difficulties in the New York Area, James D. Parsons, 707

NOMOGRAPHS
Simple Tools in a World of Computers, Frederic T. Mavis, 161

NUCLEAR ENERGY
Power Generation—Its Status and Outlook, J. George Thon, 541

NUCLEAR POWER PLANTS
Engineering Aspects of a Nuclear Desalting Plant, Joseph G. Perri, 446

NUCLEAR EXPLOSIONS
Ten Years of Plowshare, Melvin W. Jackson, 709

OCEANOGRAPHY
Ocean Engineering—Background and Prospects, Hubert H. Humphrey, 119
Oceanography As an Aid to Engineering in Coastal Waters, Gino Mecarini, 195
Ocean Wave Force Instrumentation, Thomas L. Russell, Volkmar Schoettle, and Robert G. Chown, 491
NCEL's Ocean Engineering Program, 102

OFFSHORE CONSTRUCTION
Floating V/STOL Airport Proposed, Edward G. Nawy and Cooper B. Bright, 424
NCEL'S Ocean Engineering Program, 102
Oceanography As an Aid to Engineering in Coastal Waters, Gino Mecarini, 195
Ocean Wave Force Instrumentation, Thomas L. Russell, Volkmar Schoettle, and Robert G. Chown, 491

OPTIMIZATION
Optimum Design—Minimum Weight Versus Fully Stressed, Thomas P. Kicher, 24

ORGANIZATIONS
An Organization for Construction Education, L. E. Stiffler, 370

ORTHOTROPISM
Engineering Aspects of a Nuclear Desalting Plant, Joseph G. Perri, 446

PARKING FACILITIES
Economics of Parking Structures at Airports, Paul H. Stafford, 320
Forecasts for Philadelphia International Airport, Paul H. Stafford, 391
Planning the Flatlands Urban Industrial Park, Albert T. Rosselli, 563

PAVEMENTS
Asphalt Paving for a New Airport in Alabama, Reginald Kerlin, 599
Behavior of a Soil Mass Under Dynamic Loading, R. W. Sparrow and A. C. Tory, 32
Concrete Pavement Performance at Ten Civil Airports, Martin L. Cawley, 65
Concrete Pavements Tailored to Traffic, K. E. Carter, 299
Cracked Pavement Slabs With Nonuniform Support, William Ronald Hudson and Hudson Matlock, 104
Expansive Cements in the United States, Philip W. Gutmann, 595
Fatigue Characteristics of Flexible Pavement, Hyoungkey Hong, 365
Minor Concessions to Contractors Produce More Economical Concrete Pavements, Harold J. Halm, 619
Soil-Cement Base for a Runway, C. W. Barenfanger, 418
Subgrade Stress and Deformation Under Dynamic Load, Stephen F. Brown and Peter S. Pell, 398
Viscoelastic Layered System Subjected to Moving Loads, Russell A. Westmann, 120

PENSTOCKS
Steels for Hydroelectric Applications, J. L. Fox, 636

PERMEABILITY
Darcy Flow Solutions with a Free Surface, Robert L. Taylor and C. B. Brown, 89
One-Dimensional Infiltration into Homogeneous Soil, Yu-Si Fok and Vaughn E. Hansen, 19
Pumping Test to Determine Permeability Ratio, Charles I. Mansur and Rudy J. Dietrich, 680

PERSONNEL
Engineering Education—A Consultant's View, William J. Carroll, 435
Profile: The Engineering Technician, 548

PHOTOGRAMMETRY
Photo Maps for Engineering Use, Richard O. Mahan, 338

PIERS
Beauty and the San Mateo Creek Bridge, R. C. Cassano and M. H. Jacobs, 601
Drilled-pier Cofferdam for a Building, Harold Engstrom and Robert Oates, 63
Eight-Berth Marine Terminal in Deep Bay Mud, Eugene L. Sembler, 523
Timber in Marine Structures, James R. Ayers and Ralph C. Stokes, 153
Verrazano-Narrows Bridge: Construction of Tower Foundations and Anchorages, Nomer Gray and George H. Decancq, 659

PILES AND PILE DRIVING
Flexibility in Cylinder Groups Oscillated in Water, Alan D. K. Laird, 36
Pile Foundation for Oakland Coliseum, John J. Hallenbeck, Jr., and Robert E. Johnston, 210
Piling Difficulties in the New York Area, James D. Parsons, 707
Planning and Design of a Low-Weir Section Jetty, Nels C. Magnuson, 23
Steel Deck Bridge for Japan's Largest Lake, Yasuo Kawano, 184
Subsoils and Foundation Design in Richmond, Va., Leo Casagrande, 70
Three-Dimensional Analysis of Pile Foundations, Rudolf Aschenbrenner, 455
Timber in Marine Structures, James R. Ayers and Ralph C. Stokes, 153
Wood-Structural Enigma or Engineering Reality, Joseph A. Liska, 156

PIPE FLOW
Unsteady Flow of Solid-Liquid Suspension, Don J. Wood and T. Y. Kao, 143

PIPELINES
Anticipated Foundation Movement Affects Design, George Evans, 219
Calculation of Diameter of Stretched Rubber Gasket, Paul W. Kao, 622
Criteria for Planning an Offshore Pipeline, Joe L. Krieg, 691
Gas Pipeline Safety by Design, Fred C. Culpepper, Jr., 333
Homestake Collection System: Intakes and Conduits, H. C. Cox, W. H. Blair, and R. L. Perley, 289
Innovations in the Laying and Bedding of Pipe, D. L. Chappelear and E. L. Gloyna, 692
Internal Sand Cleaning of Pipelines, Robert A. Jenkins, 656
Placing Pipeline and Outfalls Under Water, Ark G. Chin and Martin C. Dirks, 700
Plastic Pipe—A Progress Report, Jack W. Pierce, 307
Plowing-In Pipelines, William C. Kallberg, 108
Simulation As a Problem-Solving Technique, Ray R. Berman, 208
Valve Stroking for Complex Piping Systems, Victor L. Streeter, 98

PIPES (tubes)
Calculation of Diameter of Stretched Rubber Gasket, Paul W. Kao, 622
Distribution of Soil Pressures on Concrete Pipe, Howard C. Pettibone and Amster K. Howard, 180
Effect of Pipe Boundary on Hood Inlet Performance, Charles E. Rice, 358
Evaluation of Pipe Elbows as Flow Meters, John A. Replogle, Lloyd E. Myers, and Kenneth J. Brust, 373
Loop Systems for Measuring Sand-Water Mixtures, Hans A. Einstein and Walter H. Graf, 678
Pipe Joints Limit Infiltration, George W. Clark, Jr., and Martin L. Leyrer, 83
Plowing-In Pipelines, William C. Kallberg, 108
Pressure Pulsations in Flow Through Branched Pipes, David L. Appel and Yun-Sheng Yu, 612

PLANNING
The Critical Path of ASCE (Inaugural Address) Richard H. Tatlow, III, 583
Equipment Replacement Decisions, John W. Alltucker, 202
Estimating Urban Trip Production and Attraction, Peter S. Parsonson and Paul D. Cribbins, 650
Facility Planning for Philadelphia Airport, Arnold W. Thompson, 461
Forecasts for Philadelphia International Airport, Paul H. Stafford, 391
Freeway Planning in Dallas County, Texas, Arthur F. Beck, 14
Get Me to the Airport on Time, Roger H. Gilman, 420
Harvard Gulch Flood Control Project, Kenneth R. Wright, 45
Highway Esthetics, 405
Hydro Project Formulation: Results in the Southeast, Henry C. C. Weinkauff and Clement P. Lindner, 677
Integrated Operation of Reservoirs, Paul H. Berg, 144
Landscaping Urban Expressways, H. L. Hottenstein, 628
Making CPM Work, H. G. Hoggatt, 369
The Many Facets of Community Planning, William H. Wisely, 5
Optimum Size Seaport, Carl H. Plumlee, 157
Planned Community Development Over Rock, John A. Fichter, 396
Planning the Dallas-Ft. Worth Regional Airport, Walther Prokosch, 394
Role of Government in Water Resource Development, Ayers Brinser, 318
Student Research on Building Foundations, T. William Lambe, 543
Urban Freeways: Architects Join in Their Design, George A. Elliott, III, 716

PLANNING *Continued*
Water Resources Site Preservation on Federal Lands, Kenneth W. Sax, 372

PLASTICITY
Behavior of Elastic Plastic Trusses with Unstable Bars, Giulio Maier, 73
Corner Properties of Cold-formed Steel Shapes, Kenneth W. Karren, 458
Cylindrical Shells Under Ring Loads, Halil Halit Demir, 321
Effects of Cold-Forming on Light-Gage Steel Members, Kenneth W. Karren and George Winter, 470
Large Plastic Deformation of Pressurized Cylinders, Martin A. Salmon, 670

PLASTICS
Plastic Pipes—A Progress Report, Jack W. Pierce, 597
Plowing-In Pipelines, William C. Kallberg, 108
Seepage Prevention with Impermeable Membranes, Charles E. Staff, 277
Selected Abstracts on Structural Applications Structural Applications of the Committee on Plastics of the Structural Division, ASCE, Howard C. Browne, Chmn., Manuals and Reports on Engineering Practice—No. 47, 655
Study of Stability in the Hyperbolic Paraboloid, Kenneth M. Leet, 664

PLATES (Structural members)
Analysis of Beam and Plates for Ponding Loads, Ahmed E. Salama and Martin L. Moody, 514
Bending of Parallelogram Plates, B. D. Aggarwala, 309
Compact Solution of Doubly-Curved Shell Equation, Graham H. Powell, 618
Local Instability in Plates and Channel Struts, A. C. Walker, 669
Method for Minimal Design of Axisymmetric Plates, George J. Megarefs, 509
New Method for Exact Analysis of Folded Plates, Paul E. Mast, 581
Stability of Multilayer Sandwich Plates, Julius P. Wong and Ahmed E. Salama, 40
Steels for Hydroelectric Applications, J. L. Fox, 636
Strength of Longitudinally Stiffened Plate Girders, Peter B. Cooper, 484
Vibration of Cantilevered Right Triangular Plates, Dallas R. Koerner and Robert R. Snell, 659

PLYWOOD
Designing with Plywood Structural Components, W. D. Page, 636
Evolution of the Use of Plywood for Structures, David Countryman, 76
Wood-Structural Enigma or Engineering Reality, Joseph A. Liska, 156

POLES (supports)
Break-Away Sign Supports Enhance Highway Safety, Charles J. Keese, et al, 164
Pole Buildings Go Modern, W. A. Norum, 635
Stability of Transmission Line Structures, George A. Costello, 517

POLLUTION
Bibliography on Thermal Pollution: Report by the Committee on Thermal Pollution, Sanitary Engineering Division, ASCE, H. Bruce Gerber, Chmn., 597
Dispersion from Sources in Nonuniform Seepage Flow, Wen-Hsiung Li and Raymond P. Canale, 6
Regional Solid Wastes Management, Lawrence W. Bremser, 559

POLLUTION CONTROL
European Practice in Water Quality Control, Walter A. Lyon, 227

PORE WATER PRESSURES
Construction Pore Pressures in Three Earth Dams, Chung Yuan Li, 501
Cyclic Stress Conditions Causing Liquefaction of Sand, Kenneth L. Lee and H. Bolton Seed, 524
Electro-osmotic Stabilization of West Branch Dam, Claude A. Fetzer, 540
Stability of Atchafalaya Levees, Robert I. Kaufman and Frank J. Weaver, 235
Strength Variation Along Failure Surfaces in Clay, J. M. Duncan and H. Bolton Seed, 64
Willard Dam—Behavior of a Compressible Foundation, 220

PORTS
Proceedings of Tenth Conference on Coastal Engineering—1966, 688

POWER
Compact Analysis for Tower Structures, Alfred H. Palmer, 273
Design and Construction Features: Boundary Project, H. V. Strandberg, 660
Engineering Aspects of a Nuclear Desalting Plant, Joseph G. Perri, 446
Hydropower Developments in India, Asit K. Biswas, 48
Hydro Project Formulation: Results in the Southeast, Henry C. C. Weinkauff and Clement P. Lindner, 677
Hydropower Project Output Optimization, Warren A. Hall and Theodore G. Roefs, 711
Replacing East Canyon Dam While Operations Continue, Merlin D. Copen and Ernest A. Lindholm, 100
Sidestream Intakes for Hydro Power in Scotland, Edgar Burke Wilson and John Alexander Stevenson, 522
Water Quality in Pumped Storage Reservoirs, John Z. Reynolds, 650

PRESTRESSING
Prestressed Steel Stringers Solve Bridge Clearance Problem, Lewis Levine and John McLoughlin, 20
Shallow Prestressed Girders for Fresno Underpass, S. H. Studzinski, 577

PROBABILITY THEORY
Bounds on the Reliability of Structural Systems, C. Allin Cornell, 452
Risk Evaluation in Sewage Treatment Plant Design, Daniel P. Loucks, 183
Simulation As a Problem-Solving Technique, Ray R. Berman, 208
Stochastic Model of Motion of Solid Particles, Chao-Lin Chiu, 294
Stochastic Model to Fatigue, Octavio A. Rascón Chavez, 347

PROFESSIONAL ADVANCEMENT
ASCE's Future Is Our Business, Richard H. Tatlow, III, 727
Civil Engineering—Its History, George F. Branigan, 297
Engineering Education—A Consultant's View, William J. Carroll, 435
How to Publish and Perish, Robert L. Alexander, 332
A New Concept of Civil Engineering Technology, Maynard C. Nugent, 133

PROFESSIONAL ENGINEERING
Admit Civil Engineering Technicians to ASCE?, 546
Challenges to Registration of Engineers, Arthur R. Watson, 579

PROFESSIONAL PRACTICE
Civil Engineering Education That Is, Chester A. Moore, 714
Civil Engineers—Professionals or Technicians?, George M. Sicular, 708
Criticism and the Advancement of Building Engineering, Edward Cohen, 350
Current Problems in Property Location, Ira M. Tillotson and Charles E. Snyder, 648
Engineering for Marine Exploration and Development, Edward Wenk, Jr., 495
The Legal Implications of Quality Control Donald McL. Davidson, 612
Negotiating with ASCE Manual 45, N. F. Turner, 398
Role of the 'Calculated Risk' in Earthwork and Foundation Engineering, Arthur Casagrande, 530
The Spirit of Service, William H. Wisely, 719
Surveying—The Paradox of Civil Engineering, Robert B. Read, 551

PROTECTIVE COATINGS
Chlorinated Rubber as a Concrete Curing Material, Fred J. Holland, 340
Drilled-pier Cofferdam for a Building, Harold Engstrom and Robert Oates, 63
The First Hot-Dip Galvanized Bridge in the U.S., Frank J. Brechting, Jr., 575
Pole Buildings Go Modern, W. A. Norum, 635
Restoring Salt-Damaged Highway Bridges, Robert J. Walsh, 429
Seepage Prevention with Impermeable Membranes, Charles E. Staff, 277
Steel and Corrosion—Some Methods of Protection, Ronald A. Antonino, 170
Water-Filled Tubular Steel Columns—Fire Protection without Coating, L. G. Seigel, 639
Waterproofing a Tunnel Under a Canal, Sami Tibshirani, 406

PUBLICATIONS
How to Publish and Perish, Robert L. Alexander, 332

PUBLICITY
Land Survey Implications of Right-of Way Surveys, Edgar H. Swick, 95

PUMPING
Analysis of Data from Stepwise Throttled Pump Test, Gert Aron and Verne H. Scott, 136
Distribution System Equalizing Storage Hydraulics, M. B. McPherson and R. Prasad, 207
Drainage by Pumped Wells in Welton-Mohawk District, Theodore H. Moser, 486
Impoundment Destratification by Mechanical Pumping, William H. Irwin, James M. Symons, and Gordon G. Robeck, 173
Pumping Test to Determine Permeability Ratio, Charles I. Mansur and Rudy J. Dietrich, 680

PUMPS
Slurry-Trench Techniques in Deep Foundation Construction, Ben C. Gerwick, Jr., 704

QUALITY CONTROL
AITC Quality Control of Glued Laminated Timbers, Thomas E. Brassell, 639
AITC Timber Construction Manual, Russell P. Wibbens, 505
The Legal Implications of Quality Control, Donald McL. Davidson, 612

RADAR
Oceanography As an Aid to Engineering in Coastal Waters, Gino Mecarini, 195

RADIOACTIVITY
New Estuarine Measurement Equipment and Techniques, Edmund A. Prych, David W. Hubbell, and Jerry L. Glenn, 125
Radioactive Equilibrium Time, William A. Goldsmith and Eddie Joe Middlebrooks, 93

RAILROADS
Shallow Prestressed Girders for Fresno Underpass, S. H. Studzinski, 577

RAINFALL
Antecedent Retention Indexes Predict Soil Moisture, Keith E. Saxton and Arno T. Lenz, 607
Scale Model of Urban Runoff From Storm Rainfall, Robert A. Grace and Peter S. Eagleson, 573
Steady Drainage of Two-Layered Soil, Gedeon Dagan, 638

RAPID TRANSIT
Bringing Glamor to Subways, 569
Engineered Structures at Expo 67, Hal W. Hunt, 310
Get Me to the Airport on Time, Roger H. Gilman, 420
Meeting Future Surface Transportation Needs, Marshall F. Reed, Jr., 675
Placing the Underwater Tubes for BART, 554
Tunneling on London's Victoria Line Underground Railway, George S. Dodds, 113
Urban Transportation Research, Charles M. Haar, 642

REACTORS
On-Site Fabrication of Large Steel Pressure Vessels, W. R. Fickett, 348

RECREATIONAL FACILITIES
Madison Square Garden—Fabrication and Erection of Cable-Supported Roof, J. A. Sterner, 534

REFUSE DISPOSAL
Regional Solid Wastes Management, Lawrence W. Bremser, 559

REGIONAL PLANNING
The Battle to Save Lake Michigan, H. W. Poston, 725
Fundamentals of Water Pollution Control, William H. Wisely, 556

REGISTRATION
Challenges to Registration of Engineers, Arthur R. Watson, 579

REPORTS
Encourage Applied Research and Publish the Findings, Joseph T. Ling, 696

RESEARCH
Atmospheric Sciences and the Engineer, Earl G. Droessler, 154
Behavior of a Soil Mass Under Dynamic Loading, R. W. Sparrow and A. C. Tory, 32
Break-Away Sign Supports Enhance Highway Safety Charles J. Keese, et al, 164
Civil Engineering in City and Regional Planning, Melville C. Branch and L. M. K. Boelter, 649
Effect of Foreign Inclusions on Properties of Solids, Longin B. Greszczuk, 516
Encourage Applied Research and Publish the Findings, Joseph T. Ling, 696
Forest Service Research on Structural Use of Wood, Alan D. Freas, 147
Inter-American Program: Past, Present, and Future, Frederick J. McGarry and Charles L. Miller, 604
Keeping Afloat on the Fact Flood, W. N. Carey, 335
Ocean Engineering—Background and Prospects, Hubert H. Humphrey, 119
Progress Report—ASCE Combined Sewer Separation Project, M. B. McPherson, 713
Rotational Capacity of Reinforced Concrete Beams, W. Gene Corley, 451
Wood Engineering in Forestry Laboratories, D. E. Kennedy, 513
Wood-Structural Enigma or Engineering Reality, Joseph A. Liska, 156

RESERVOIRS
Dustfall as a Source of Water Quality Impairment, Richard E. Johnson, August T. Rossano, and Robert D. Sylvester, 723
Earth Movement at Baldwin Hills Reservoir, Robert B. Jansen, Gordon W. Dukleth, Bernard B. Gordon, Laurence B. James, and Clyde E. Shields, 403
Hydropower Project Output Optimization, Warren A. Hall and Theodore G. Roefs, 711
Impoundment Destratification by Mechanical Pumping, William H. Irwin, James M. Symons, and Gordon G. Robeck, 173
Integrated Operation of Reservoirs, Paul H. Berg, 144
Sedimentation Research Needs in Semiarid Regions, Kenneth G. Renard and Robert B. Hickok, 279
Water Quality in Pumped Storage Reservoirs, John Z. Reynolds, 650

RETAINING WALLS
Slurry-Trench Techniques in Deep Foundation Construction, Ben C. Gerwick, Jr., 704

REVETMENTS
Comprehensive River Stabilization, Walter C. Carey, 645

RIVERS
Comprehensive River Stabilization, Walter C. Carey, 645
Flood Routing in an Irregular Channel, Alan G. Fletcher and Wallis S. Hamilton, 237
Inland Delta Building Activity of Kosi River, Chintaman V. Gole and Shrikrishnan V. Chitale, 37
Potential Evaporation and River Basin Evaporation, Fred I. Morton, 672
The Ruhr and the Delaware, Allen V. Kneese, 200

RIVETS
Bibliography on Bolted and Riveted Joints, Prepared by the Task Committee on Structural Connections of the Committee on Metals of the Structural Division, ASCE, and the Research Council on Riveted and Bolted Structural Joints. ASCE—Manuals and Reports on Engineering Practice—No. 48, 658

ROADS
Concrete Pavements Tailored to Traffic, K. E. Carter, 299
Highway Safety Elements in Aesthetic Design, James A. Head, 190

ROCK MECHANICS
Construction of Morrow Point Power Plant and Dam, James D. Seery, 3
Rock Mechanics Engineering for Boundary Project, Adolf A. Schilling, 10

ROCKS
Planned Community Development Over Rock, John A. Fichter, 396

ROOFS
Design of Cable Roof for Madison Square Garden, Fred Fischer, Jr., 355
Madison Square Garden—Fabrication and Erection of Cable-Supported Roof, J. A. Sterner, 534
A Modern Concept in Timber Truss Design, Edwin L. Morris, 319
Oakland Coliseum Features Cable Supported Roof, 93
Tulsa Exposition Building—Hanging Cantilevers Provide Cover Framing, Melvin L. Sedlacek with Bert E. Griffin, 222

RUNOFF
Antecedent Retention Indexes Predict Soil Moisture, Keith E. Saxton and Arno T. Lenz, 607
Harvard Gulch Flood Control Project, Kenneth R. Wright, 45
Research Guidelines to Sound Watershed Development, Roland R. Renne, 465
Scale Model of Urban Runoff From Storm Rainfall, Robert A. Grace and Peter S. Eagleson, 573
Underflow Sewers for Chicago, Milton Pikarsky and Clint J. Keifer, 430

SAFETY
Break-Away Sign Supports Enhance Highway Safety, Charles J. Keese, et al, 164
Bringing Glamor to Subways, 569
Gas Pipeline Safety by Design, Fred C. Culpepper, Jr., 333
Highway Safety Elements in Aesthetic Design, James A. Head, 190
Highways Designed for Safety, 625
Landscaping Urban Expressways, H. L. Hottenstein, 628
Ponding of Rainwater on Flexible Roof Systems, Donald A. Sawyer, 542

SALINITY
Drainage by Pumped Wells in Welton-Mohawk District, Theodore H. Moser, 486
Observations on Tile Drainage Performance, Arthur F. Pillsbury, 482
Proposed Project for a Salinity Problem at Abadan, M. B. Gholizadeh and Albert T. Petersen, 12

SANDS
Bed-Load Transport at High Shear Stress, Kenneth C. Wilson, 410
By-Passing and Back-Passing with Reference to Florida, Per M. Bruun, 146
Cyclic Stress Conditions Causing Liquefaction of Sand, Kenneth L. Lee and H. Bolton Seed, 524
Dispersion in Layered Porous Media, Uri Y. Shamir and Donald R. F. Harleman, 515
Dynamic Strength of Anistropically Consolidated Sand, Kenneth L. Lee and H. Bolton Seed, 492
Liquefaction of Saturated Sands During Cyclic Loading, H. Bolton Seed and Kenneth L. Lee, 519
Spectral Analysis of Sand Waves, Carl F. Nordin, Jr. and James H. Algert, 586

SANITARY ENGINEERING
Air Research Monitoring Station System, William T. Ingram, Conrad Simon, and James R. McCarroll, 33
The Battle to Save Lake Michigan, 725
Bibliography on Thermal Pollution: Report by the Committee on Thermal Pollution, Sanitary Engineering Division, ASCE, H. Bruce Gerber, Chmn., 597
Diatomite Filtration Equations for Various Septa, James H. Dillingham, John L. Cleasby, and E. Robert Baumann, 58
Dichromate Versus Ceric Sulphate in COD Determinations, M. A. El-Dib and F. M. Ramadan, 386
Dustfall as a Source of Water Quality Impairment, Richard E. Johnson, August T. Rossano, and Robert O. Sylvester, 725
The East-West Water Controversy: Both Sides Are Partly Right, Ray K. Linsley, 504
Encourage Applied Research and Publish the Findings, Joseph T. Ling, 696
European Practice in Water Quality Control, Walter A. Lyon, 227
Eutrophication—The New Pollution, Gilbert V. Levin, 433
Evaluation of Hydraulic Efficiency of Sedimentation Basins, M. Rebhun and Y. Argaman, 721
Getting More for the Water-Pollution Control Dollar, Richard Hazen, 722
Hydrology of Water Quality Dilution Requirements, Malcolm F. Kallus and Jack W. Keeley, 214
Impoundment Destratification by Mechanical Pumping, William H. Irwin, James M. Symons, and Gordon G. Robeck, 173
Impoundment Water Quality Changes Caused by Mixing, James M. Symons, William H. Irwin, and Gordon G. Robeck, 79
Is There an East-West Water Conflict?, Floyd E. Dominy, 499
Least Squares Estimation of Mixing Coefficients, Edward L. Thackston, James R. Hays, and Peter A. Krenkel, 494

SANITARY ENGINEERING *Continued*

Mathematical Model for Water Pollution Control Studies, Alvin S. Goodman and William E. Dobbins, 315

Mixing and Dispersion Studies in San Francisco Bay, Thomas E. Bailey, Charles A. McCullough, and Charles G. Gunnerson, 46

Nominal Diameter of Floc Related to Oxygen Transfer, James A. Mueller, Karl G. Voelkel, and William C. Boyle, 304

Partial Demineralization of Brackish Waters, Robert L. Sanks and Warren J. Kaufman, 131

Pipe Joints Limit Infiltration, George W. Clark, Jr., and Martin L. Leyrer, 83

Placing Pipeline and Outfalls Under Water, Ark G. Chin and Martin C. Dirks, 700

Precipitation of Iron in Aerated Ground Waters, Mriganka, M. Ghosh, John T. O'Connor, and R. S. Engelbrecht, 653

Prediction of Diatomite Filter Cake Resistance, James H. Dillingham, John L. Cleasby, and E. Robert Baumann, 117

Progress in Control of Vehicle Emissions, John H. Ludwig, 288

Radioactive Equilibrium Time, William A. Goldsmith and Eddie Joe Middlebrooks, 93

Regional Solid Wastes Management, Lawrence W. Bremser, 559

Risk Evaluation in Sewage Treatment Plant Design, Daniel P. Loucks, 183

The Ruhr and the Delaware, Allen V. Kneese, 200

Sand Filtration of Particulate Matter, Eric Davis and Jack A. Borchardt, 503

San Francisco's Solid Wastes Crisis, Frank P. Sebastian, 571

Scope of the Solid Waste Problem, Wesley E. Gilbertson, 668

Settling of Activated Sludge in Horizontal Tanks, Claes N. H. Fischerstrom, E. Isgard, and I. Larsen, 474

Underflow Sewers for Chicago, Milton Pikarsky and Clint J. Keifer, 430

Water Purification by Forced-Flow Electrophoresis, Fredrick C. Cooper, Quentin M. Mees, and Milan Bier, 674

Water Supply and Waste Disposal in Alaska Native Communities, K. C. Lauster, 148

SCOTLAND

Sidestream Intakes for Hydro Power in Scotland, Edgar Burke Wilson and John Alexander Stevenson, 522

SEAPORTS

Optimum Size Seaport, Carl H. Plumlee, 157

SEDIMENTATION

Drop-Box Weir for Sediment-Laden Flow Measurement, Clifton W. Johnson, Howard D. Copp, and Roy E. Tinney, 52

Evaluation of Hydraulic Efficiency of Sedimentation Basins, M. Rebhun and Y. Argaman, 721

Sedimentation Research Needs in Semiarid Regions, Kenneth G. Renard and Robert B. Hickok, 279

Settling of Activated Sludge in Horizontal Tanks, Claes N. H. Fischerstrom, E. Isgard, and I. Larsen, 474

SEDIMENTS

Abstracts of Papers, Tenth Conference on Coastal Engineering, Coastal Engineering Research Council, Waterways and Harbors Division, ASCE, M. P. O'Brien, Chmn., 642

Bed-Load Transport at High Shear Stress, Kenneth C. Wilson, 410

Design of Desilting Works for Irrigation Systems, Floyd E. Dominy, 390

Diffusion of Sediment in a Submerged Jet, Surya Rao Singamsetti, 228

Loop Systems for Measuring Sand-Water Mixtures, Hans A. Einstein and Walter H. Graf, 678

Mud Floods Related to the Irazu Volcano Eruptions, Carlos A. Ulate and Manuel F. Corrales, 107

Natural Indicators of Estuarine Sediment Movement, John V. Byrne and L. D. Kulm, 449

New Estuarine Measurement Equipment and Techniques, Edmund A. Prych, David W. Hubbell, and Jerry L. Glenn, 125

Similarity Laws for Localized Scour, Marion R. Carstens, 62

Stochastic Model of Motion of Solid Particles, Chao-Lin Chiu, 294

SEEPAGE

Coastal Parallel Canals with Intermediate Drains, Srisakdi Charmonman, 223

Grain Size vs Dollars for Drainage Aggregates, Harry R. Cedergren, 608

Graphs for Locating the Line of Seepage in an Earth Dam, M. R. Carstens with George D. May, 328

Post-Construction Behavior of Round Butte Dam, James G. Patrick, 506

Seepage Under a Rectangular Dam, George J. W. King, 274

Steady Drainage of Two-Layered Soil, Gedeon Dagan, 638

Steady-State Theories for Drainage, Don Kirkham, 656

SETTLEMENT

Anticipated Foundation Movement Affects Design, George Evans, 219

Foundation Clay Shrinkage Caused by Large Trees, Mark J. Hammer and Orville B. Thompson, 86

Post-Construction Behavior of Round Butte Dam, James G. Patrick, 506

Stability of Atchafalaya Levees, Robert I. Kaufman and Frank J. Weaver, 235

Willard Dam—Behavior of a Compressible Foundation, 220

SEWAGE DISPOSAL
Engineered Structures at Expo 67, Hal W. Hunt, 310
Water Supply and Waste Disposal in Alaska Native Communities, K. C. Lauster, 148

SEWAGE TREATMENT
Eutrophication—The New Pollution, Gilbert V. Levin, 433
Mathematical Model for Water Pollution Control Studies, Alvin S. Goodman and William E. Dobbins, 315
Risk Evaluation in Sewage Treatment Plant Design, Daniel P. Loucks, 183

SEWERS
Pipe Joints Limit Infiltration, George W. Clark, Jr., and Martin L. Leyrer, 83
Placing Pipeline and Outfalls Under Water, Ark G. Chin and Martin C. Dirks, 700
Plastic Pipe—A Progress Report, Jack W. Pierce, 307
Progress Report—ASCE Combined Sewer Separation Project, M. B. McPherson, 713
Underflow Sewers for Chicago, Milton Pikarsky and Clint J. Keifer, 430

SHEAR STRENGTH
Anisotropy and Stress Reorientation in Clay, James M. Duncan and H. Bolton Seed, 80
Bearing-Type Bolted Hybrid Joints, Robert Kormanik and John W. Fisher, 661
Dynamic Soil Strength and Slope Stability, Willard Ellis and V. B. Hartman, 175
Effective Stress Evaluation for Unsaturated Soils, G. E. Blight, 166
Electrokinetic Stabilization of an Illitic Clay, Melvin I. Esrig and John P. Gemeinhardt, Jr., 502
Engineering Properties of Simulated Lunar Soils, Eben Vey and John D. Nelson, 487
Review of Concrete Beams Failing in Shear, Boris Bresler and J. G. MacGregor, 342
Shear Strength Properties of Two Stratified Clays, Kwan Yee Lo and Victor Milligan, 414
Strength Characteristics of Desiccated Clays, Geoffrey E. Blight, 15
Strength of Longitudinally Stiffened Plate Girders, Peter B. Cooper, 484
Strength Variation Along Failure Surfaces in Clay, J. M. Duncan and H. Bolton Seed, 64

SHEAR STRESS
Factors Determining the Strength of Secondary Flow, Chao-Lin Chiu, 402
Out-of-Plane Displacements and Stresses in a Torus, David J. McGill, 566
Strength Characteristics of Desiccated Clays, Geoffrey E. Blight, 15

SHEAR TESTS
Analysis of a Shear Wall Supported by a Beam, A. T. Hinkley, 614

SHELLS (Structural forms)
Analysis of Laminated Shells of Revolution, Stanley B. Dong, 110
Bending and Membrane Equilibrium in Cooling Towers, E. L. Albasiny and D. W. Martin, 137
Bending of Hyperbolic Paraboloid Structures, Roy R. Russell and Kurt H. Gerstle, 489
Buckling of Cylindrical Shells under Axial Compression, A. N. Sherbourne and R. M. Korol, 584
Buckling of Open Cylindrical Shells, Kuanghan Chu and G. Krishnamoorthy, 367
Cartesian Formulation of Membrane Theory, Ziad M. Elias, 345
Compact Solution of Doubly-Curved Shell Equation, Graham H. Powell, 618
Cylindrical Shells Under Ring Loads, Halil Halit Demir, 321
Denting of Circular Bins with Eccentric Drawpoints, Andrew W. Jenike, 481
Dynamic Stability of a Shallow Cylindrical Shell, Ivor K. McIvor and Carl H. Popelar, 81
Edge Load Solutions for Conical Shells, Jack R. Vinson, 714
Effect of Boundary Conditions on Shell Buckling, Leon R. L. Wang, L. Rodriquez-Agrait, and William A. Litle, 16
Inflatable Shells: Pressurization Phase, John W. Leonard, 24
Large Plastic Deformation of Pressurized Cylinders, Martin A. Salmon, 670
Numerical Analysis of Noncircular Cylindrical Shells, Gordon B. Mah, 156
Study of Stability in the Hyperbolic Paraboloid, Kenneth M. Leet, 664
Transversally Isotropic Cylinders Under Band Loads, Howard S. Levine and Jerome M. Klosner, 53
Vibration of Thin Shells under Initial Stress, George Herrmann and John Shaw, 717

SHIELDS (Tunneling)
Stability of Clay at Vertical Openings, Bengt B. Broms and Hans Bennermark, 544
Tunneling on London's Victoria Line Underground Railway, George S. Dodds, 113

SHIP GENERATED WAVES
Investigation of Ship-Generated Waves, Robert M. Sorensen, 550

SHORE PROTECTION
Abstracts of Papers, Tenth Conference on Coastal Engineering, Coastal Engineering Research Council, Waterways and Harbors Division, ASCE, M. P. O'Brien, Chmn., 642
Holland—Between River and Sea, David P. Billington, 417
Hurricane-Flood Protection in the United States, Harry S. Perdikis, 60

SHORING
Slurry-Trench Techniques in Deep Foundation Construction, Ben C. Gerwick, Jr., 704

SIGNS
Break-Away Sign Supports Enhance Highway Safety, Charles J. Keese, et al, 164

SIMULATION
Simulation As a Problem-Solving Technique, Ray R. Berman, 208

SLABS
Cracked Pavement Slabs With Nonuniform Support, William R. Hudson and Hudson Matlock, 104

SLOPE STABILITY
Stability of Atchafalaya Levees, Robert I. Kaufman and Frank J. Weaver, 235

SLUDGE
Settling of Activated Sludge in Horizontal Tanks, Claes N. H. Fischerstrom, E. Isgard, and I. Larsen, 474

SOIL MECHANICS
Analysis of Consolidation by Rate Process Theory, T. H. Wu, D. Resendiz, and R. J. Neukirchner, 580
Anisotropy and Stress Reorientation in Clay, James M. Duncan and H. Bolton Seed, 80
Anticipated Foundation Movement Affects Design, George Evans, 219
Arching for Vertically Buried Prismatic Structures, Phillip A. Abbott, 488
Behavior of a Soil Mass Under Dynamic Loading, R. W. Sparrow and A. C. Tory, 32
Buckling of Soil-Surrounded Tubes, Ulrich Luscher, 496
Cement Stabilization of Volcanic Materials, Roland A. Pettitt, 588
Chemical Stabilization of an Active Landslide, Richard L. Handy and Wayne W. Williams, 381
Consolidation of Slightly Overconsolidated Soils, Gerald Patrick Raymond, 124
Construction of Morrow Point Power Plant and Dam, James D. Seery, 3
Construction Pore Pressures in Three Earth Dams, Chung Yuan Li, 501
Cyclic Stress Conditions Causing Liquefaction of Sand, Kenneth L. Lee and H. Bolton Seed, 524
Deflection of Multilayer Soil Systems, K. Ueshita and George G. Meyerhof, 493
Design of a Differential Pore Pressure and Its Time Lag Characteristics, Jagdish Narain and Bhawani Singh, 105
Dimensionless Parameters for Homogeneous Earth Slopes, James M. Bell, 521
Distribution of Soil Pressures on Concrete Pipe, Howard C. Pettibone and Amster K. Howard, 180
Dynamic Soil Strength and Slope Stability, Willard Ellis and V. B. Hartman, 175
Dynamic Strength of Anistropically Consolidated Sand, Kenneth L. Lee and H. Bolton Seed, 492
Earth Dams—Design As You Build, C. Y. Li, 77
Earthquake Response of Earth Dams, Anil K. Chopra, 138
Earthquake Stability of Cohesive Slopes, W. D. Liam Finn, 676
Effective Stress Evaluation for Unsaturated Soils, G. E. Blight, 166
Eight-Berth Marine Terminal in Deep Bay Mud, Eugene L. Sembler, 523
Electrokinetic Stabilization of an Illitic Clay, Melvin I. Esrig and John P. Gemeinhardt, Jr., 502
Electro-osmotic Stabilization of West Branch Dam, Claude A. Fetzer, 540
Engineering Properties of Simulated Lunar Soils, Eben Vey and John D. Nelson, 487
Foundation Clay Shrinkage Caused by Large Trees, Mark J. Hammer and Orville B. Thompson, 86
Large-Scale Testing of Rockfill Materials, Raul J. Marsal, 498
Liquefaction of Saturated Sands During Cyclic Loading, H. Bolton Seed and Kenneth L. Lee, 519
Model Study of Dynamically Loaded Arch Structures, Don R. Denton and William J. Flathau, 669
Performance of El Infiernillo Dam, 1963–1966, Raul J. Marsal and Luis Ramirez de Arellano, 189
Piezometers Monitor Waterfront Fill, William H. Griffin, 000
Pile Foundation for Oakland Coliseum, John J. Hallenbeck, Jr., and Robert E. Johnston, 210
Post-Construction Behavior of Round Butte Dam, James G. Patrick, 506
Pumping Test to Determine Permeability Ratio, Charles I. Mansur and Rudy J. Dietrich, 680
Replica Modeling in Soil Dynamics, Peter S. Westine, 518
Rockfill Structures Subject to Water Flow, Alan K. Parkins, David H. Trollope, and John D. Lawson, 412
Role of the 'Calculated Risk' in Earthwork and Foundation Engineering, Arthur Casagrande, 530
Seepage Under a Rectangular Dam, George J. W. King, 274
Shear Strength Properties of Two Stratified Clays, Kwan Yee Lo and Victor Milligan, 414
Slope Stability During Earthquakes, H. Bolton Seed, 610
Stability of Atchafalaya Levees, Robert I. Kaufman and Frank J. Weaver, 235
Stability of Clay at Vertical Openings, Bengt B. Broms and Hans Bennermark, 544
Stability of Natural Slopes, Ralph B. Peck, 213
Static Penetrometers for Soil Exploration, John H. Schmertmann, 326
Strength Characteristics of Desiccated Clays, Geoffrey E. Blight, 15
Strength Variation Along Failure Surfaces in Clay, J. M. Duncan and H. Bolton Seed, 64
Stress Computation in Soil Media, Hans U. Smoltczyk, 280

SOIL MECHANICS *Continued*
Student Research on Building Foundations, T. William Lambe, 543
Subgrade Stress and Deformation Under Dynamic Load, Stephen F. Brown and Peter S. Pell, 398
Subsoils and Foundation Design in Richmond, Va. Leo Casagrande, 70
Temperature Effects on Clay Soil Consolidation, Robert E. Paaswell, 150
Three-Dimensional Analysis of Pile Foundations, Rudolf Aschenbrenner, 455
Transient Loading Tests on a Circular Footing, Vincent P. Drnevich and John R. Hall, 49
Underground Garage Benefits from Innovations, Fritz Kramrisch, 689
Willard Dam—Behavior of a Compressible Foundation, 220

SOILS
One-Dimensional Infiltration into Homogeneous Soil, Yu-Si Fok and Vaughn E. Hansen, 19

SOLID WASTES
Regional Solid Wastes Management, Lawrence W. Bremser, 559
San Francisco's Solid Wastes Crisis, Frank P. Sebastian, 571

SPACE EXPLORATION
Service Structure Concepts for Post-Saturn Rockets, Merrill E. Crissey, 296
Siting of Manned Lunar Launch Facilities, Arthur G. Porcher, 647

SPECIFICATIONS
Minor Concessions to Contractors Will Produce More Economical Concrete Pavements, Harold J. Halm, 619
Neoprene Elastomer Bearings—Ten Years Experience Proves Their Importance, Robert Lee Pare, 591
Plastic Pipe—A Progress Report, Jack W. Pierce, 307

SPILLWAYS
Effect of Pipe Boundary on Hood Inlet Performance, Charles E. Rice, 358
Flow in Culverts and Related Design Philosophies, Fred W. Blaisdell, 57
A Navigation Lock That is Also a Spillway, Anton M. Grzywienski, 313

SPRINKLERS
Relationships Among Sprinkler Uniformity Measures, Jack G. Beale and David T. Howell, 657

STABILITY
Aerodynamic Stability of H Sections, Daniel Dicker, 174
Analysis of Beams and Plates for Ponding Loads, Ahmed E. Salama and Martin L. Moody, 514
Collapse and Shakedown Loads of Plane Frames, J. Michael Davies, 528
Dimensionless Parameters for Homogeneous Earth Slopes, James M. Bell, 521
Eccentrically Loaded Steel Columns with Initial Curvature, Edwin C. Rossow, George B. Barney, and Seng-Lip Lee, 438
Effects of Cold-Forming on Light-Gage Steel Members, Kenneth W. Karren and George Winter, 470
Gust Loading Factors, Alan G. Davenport, 536
Rockfill Structures Subject to Water Flow, Alan K. Parkin, David H. Trollope, and John D. Lawson, 412
Stability of Clay at Vertical Openings, Bengt B. Broms and Hans Bennermark, 544
Stability of Multilayer Sandwich Plates, Julius P. Wong and Ahmed E. Salama, 40
Stability of Rigid Frames with Nonuniform Members, Chu-Kia Wang, 456
Stability of Tensile Cracks in Concrete Beams, Nat W. Krahl, Narbey Khachaturian, and Chester P. Siess, 121
Stability of Transmission Line Structures, George A. Costello, 517

STABILIZATION
Electro-osmotic Stabilization of West Branch Dam, Claude A. Fetzer, 540

STADIUMS
Oakland Calif. Coliseum Features Cable Supported Roof, 93

STANDARDS
American Lumber Standards Committee, James H. Carr, Jr., 116
Progress in Control of Vehicle Emissions, John H. Ludwig, 288
Wood—A Reliable Engineering Material, Lyman W. Wood, 96
Wood Engineering in Forestry Laboratories, D. E. Kennedy, 513

STATISTICAL ANALYSIS
Airport Accessibility and Detroit Passengers, Rolla Edward Park, 10
Gust Loading Factors, Alan G. Davenport, 536
Wave Statistics from Hurricane Dora, J. Ian Collins, 163

STEEL BEAMS
Inelastic Beams Under Moment Gradient, Maxwell G. Lay and Theodore V. Galambos, 570

STEEL CONSTRUCTION
Prestressed Steel Stringers Solve Bridge Clearance Problem, Lewis Levine and John McLoughlin, 20

STEELS
Bearing-Type Bolted Hybrid Joints, Robert Kormanik and John W. Fisher, 661
Commentary on Welded Cover-Plated Beams, Report of the Subcommittee on Cover Plates, Task Committee on Flexural Members, Structural Division, ASCE, John W. Fisher, Chmn., 594

STEELS *Continued*
Comparison of Static and Dynamic Hysteresis, Robert D. Hansen, 204
Corner Properties of Cold-formed Steel Shapes, Kenneth W. Karren, 458
Denting of Circular Bins with Eccentric Drawpoints, Andrew W. Jenike, 481
Design Data for High-Yield-Strength Alloy Steel, Geerhard Haaijer, 226
Eccentrically Loaded Steel Columns with Initial Curvature, Edwin C. Rossow, George B. Barney, and Seng-Lip Lee, 438
Economy of Corrosion-Resistant Steel in Highway Bridges, John M. Hayes and Samuel P. Maggard, 81
Effects of Cold-Forming on Light-Gage Steel Members, Kenneth W. Karren and George Winter, 470
Framing Connections for Square Structural Tubing, Richard N. White and Pen Jeng Fang, 415
Large Plastic Deformation of Pressurized Cylinders, Martin A. Salmon, 670
New Deck Appeases Bridge of the Gods, N. W. Haner, 605
On-Site Fabrication of Large Steel Pressure Vessels, W. R. Fickett, 348
Steel and Corrosion—Some Methods of Protection, Ronald A. Antonino, 170
Steel Bar Weights in Metric Units, Oluf A. Pedersen, 232
Steels for Hydroelectric Applications, J. L. Fox, 636
Strength of Longitudinally Stiffened Plate Girders, Peter B. Cooper, 484
Web Crippling Tests on Hybrid Beams, Charles G. Schilling, 237
A Welded Steel Frame Skyscraper, Ezra Meir, 123

STIFFNESS
Analysis of Laminated Shells of Revolution, Stanley B. Dong, 110
Compact Analysis for Tower Structures, Alfred H. Palmer, 273
Compact Solution of Doubly-Curved Shell Equation, Graham H. Powell, 618
Computer Analysis of Plane and Space Structures, Semih S. Tezcan, 667
Ill-Conditioned Stiffness Matrices, Jayant M. Shah, 69

STORMS
Atmospheric Sciences and the Engineer, Earl G. Droessler, 154
Urban Hydrology—A Redirection, D. Earl Jones, 361

STORM WATER
Underflow Sewers for Chicago, Milton Pikarsky and Clint J. Keifer, 430

STRAINS
Analysis of Laminated Shells of Revolution, Stanley B. Dong, 110
Behavior of a Soil Mass Under Dynamic Loading, R. W. Sparrow and A. C. Tory, 32
Earthquake Stress Analysis in Earth Dams, Ray W. Clough and Anil K. Chopra, 662
Fatigue Characteristics of Flexible Pavement, Hyoungkey Hong, 365
Subgrade Stress and Deformation Under Dynamic Load, Stephen F. Brown and Peter S. Pell, 398

STREAM GAGES
Constructing a Temporary Stream Gaging Station, Perry H. Rahn and M. Todd Giddings, 693

STREAMS
Least Squares Estimation of Mixing Coefficients, Edward L. Thackson, James R. Hays, and Peter A. Krenkel, 494
Sedimentation Research Needs in Semiarid Regions, Kenneth G. Renard and Robert B. Hickok, 279
Sidestream Intakes for Hydro Power in Scotland, Edgar Burke Wilson and John Alexander Stevenson, 522
Stream-Aquifer System Analysis, Ali Eshett and Morton W. Bittinger, 628

STREETS
Deficiencies of Urban Transportation Studies, Roy E. Jorgensen, 682

STRENGTH OF MATERIALS
Design Data for High-Yield-Strength Alloy Steel, Geerhard Haaijer, 226
Plastic Pipe—A Progress Report, Jack W. Pierce, 307
Steels for Hydroelectric Applications, J. L. Fox, 636
Structural Metal Composites, Russel C. Jones, 50

STRESSES
Analysis of Laminated Shells of Revolution, Stanley B. Dong, 110
Anisotropy and Stress Reorientation in Clay, James M. Duncan and H. Bolton Seed, 80
Behavior of a Soil Mass Under Dynamic Loading, R. W. Sparrow and A. C. Tory, 32
Computer Analysis of the F-111 Wing Assembly, Joseph Antebi, Edwin C. Rossow, Indravadan K. Shah, and Jayant M. Shah, 30
Computer Design of 100-Story John Hancock Center, Fazlur R. Khan, Srinivasa H. Iyengar, and Joseph P. Colaco, 162
Cyclic Stress Conditions Causing Liquefaction of Sand, Kenneth L. Lee and H. Bolton Seed, 524
Denting of Circular Bins with Eccentric Drawpoints, Andrew W. Jenike, 481
Effective Stress Evaluation for Unsaturated Soils, G. E. Blight, 166
Fatigue Characteristics of Flexible Pavement, Hyoungkey Hong, 365
Method for Minimal Design of Axisymmetric Plates, George J. Megarefs, 509
Model for Compression of Elastic-Plastic Cylinders, R. M. Korol and A. N. Sherbourne, 557

STRESSES *Continued*
On-Site Fabrication of Large Steel Pressure Vessels, 348
Optimum Design—Minimum Weight Versus Fully Stressed, Thomas P. Kicher, 24
Performance of El Infiernillo Dam, 1963–1966, Raul J. Marsal and Luis Ramirez de Arellano, 189
Rock Mechanics Engineering for Boundary Project, Adolf A. Schilling, 10
Shear Strength Properties of Two Stratified Clays, Kwan Yee Lo and Victor Milligan, 414
Stability of Atchafalaya Levees, Robert I. Kaufman and Frank J. Weaver, 235
Steels for Hydroelectric Applications, J. L. Fox, 636
Strength Variation Along Failure Surfaces in Clay, J. M. Duncan and H. Bolton Seed, 64
Subgrade Stress and Deformation Under Dynamic Load, Stephen F. Brown and Peter S. Pell, 398
Torsional Response of Tapered I-Girders, George C. Lee and Barna A. Szabo, 597
Transient Loading Tests on a Circular Footing, Vincent P. Drnevich and John R. Hall, 49
Transversally Isotropic Cylinders Under Band Loads, Howard S. Levine and Jerome M. Klosner, 53
Vibration of Thin Shells under Initial Stress, George Herrmann and John Shaw, 717

STRUCTURAL ANALYSIS
Selected Abstracts on Structural Applications of Plastics, Prepared by the Task Committee on Structural Applications of the Committee on Plastics of the Structural Division, ASCE, Howard C. Browne, Chmn., 655

STRUCTURAL DESIGN
Selected Abstracts on Structural Applications of Plastics, Prepared by the Task Committee on Structural Applications of the Committee on Plastics of the Structural Division, ASCE, Howard C. Browne, Chmn., 655
Structural Design of Large Space Chambers, Lewis H. Blakey, 4

STRUCTURAL ENGINEERING
AITC Quality Control of Glued Laminated Timbers, Thomas E. Brassell, 639
AITC Timber Construction Manual, Russell P. Wibbens, 505
American Lumber Standards Committee, James H. Carr, Jr., 116
Analysis of Beams and Plates for Ponding Loads, Ahmed E. Salama and Martin L. Moody, 514
Analysis of a Shear Wall Supported by a Beam, A. T. Hinkley, 614
Analysis of Vierendeel Truss with Inclined Chords, Hsien-San Tsang, 463
Aseismic Design of Multistory Systems, E. F. Kokinopoulos, 301
Bearing-Type Bolted Hybrid Joints, Robert Kormanik and John W. Fisher, 661
Behavior of Concrete in Biaxial Compression, George S. Robinson, 393
Behavior of Splices in Beam-Column Connections, Joseph P. Colaco and Chester P. Siess, 562
Bending of Hyperbolic Paraboloid Structures, Roy R. Russell and Kurt H. Gerstle, 489
Bounds on the Reliability of Structural Systems, C. Allin Cornell, 452
Buckling of Cylindrical Shells under Axial Compression, A. N. Sherbourne and R. M. Korol, 584
Building Codes, William H. Correale, 141
Building Design Using Linear Programming, Moshe F. Rubinstein and John Karagozian, 178
Collapse and Shakedown Loads of Plane Frames, J. Michael Davies, 528
Columns and Beams Braced by Diaphragms, Samuel J. Errera, George Pincus, and Gordon P. Fisher, 111
Complementary Energy Concept for Large Deformations, Cenap Oran, 633
Compact Analysis for Tower Structures, Alfred H. Palmer, 273
Comparison of Static and Dynamic Hysteresis, Robert D. Hansen, 204
Computer-Aided Bridge Design, Gerald M. Sturman, Leland C. Albertson, Jr., C. Allin Cornell, and Jose M. Roesset, 553
Computer Analysis of the F-111 Wing Assembly, Joseph Antebi, Edwin C. Rossow, Indravadan K. Shah, and Jayant M. Shah, 30
Computer Analysis of Plane and Space Structures, Semih S. Tezcan, 667
Computer Analysis of Towers Verified by Testing, Charles F. Beck and Max Zar, 186
Computer Analysis of Two-Hinged Circular Arches, Robert C. Cornforth and S. Bart Childs, 477
Computer Design of a Tower and Cable System, R. A. Williamson, H. F. Stevenson, and P. W. Van der Pas, 217
Computer Design of 100-Story John Hancock Center, Fazlur R. Khan, Srinivasa H. Iyengar, and Joseph P. Colaco, 162
Computers and the Design of The World Trade Center, Richard E. Taylor, 103
Criticism and the Advancement of Building Engineering, Edward Cohen, 350
Cylindrical Shells Under Ring Loads, Halil Halit Demir, 321
Datalink: A Structural Laboratory Data System, William A. Litle, 525
DATALINK: A Structural Laboratory On-Line Language, Kenneth F. Reinschmidt, 84
Denting of Circular Bins with Eccentric Drawpoints, Andrew W. Jenike, 481
Design Data for High-Yield-Strength Alloy Steel, Geerhard Haaijer, 226
Designing with Plywood Structural Components, W. D. Page, 636
Design of Cable Roof for Madison Square Garden, Fred Fischer, Jr., 355
Direct Analysis of Continuous Beam-Columns, John Dundurs, Seng-Lip Lee, and Peter A. Hampe, 663

STRUCTURAL ENGINEERING *Continued*

Drift Study of Tapered Frameworks, John F. Fleming, Walter Podolny, Jr., and Thomas S. Rile, 375

Ductility of Building Frames under Earthquake Loads, Charles Mackintosh, 425

Earthquake Requirements in Building Codes, Melvin W. Jackson, 427

Eccentrically Loaded Steel Columns with Initial Curvature, Edwin C. Rossow, George B. Barney, and Seng-Lip Lee, 438

Effects of Cold-Forming on Light-Gage Steel Members, Kenneth W. Karren and George Winter, 470

Environment for Problem-Oriented Languages, Edward L. Murphee, Jr., John W. Melin, and Steven J. Fenves, 159

Evolution of the Use of Plywood for Structures, David Countryman, 76

Finite Beams on Elastic Foundations, Constancio Miranda and Keshavan Nair, 666

Finite Difference Accuracy in Structural Analysis, Nancy Jane Cyrus and Robert E. Fulton, 200

Forest Service Research on Structural Use of Wood, Alan D. Freas, 147

Framing Connections for Square Structural Tubing, Richard N. White and Pen Jung Fang, 415

General Method for Beams on Elastic Supports, Ralph R. Mozingo, 472

General Theory of Cyclically Symmetric Frames, M. J. L. Hussey, 589

Gust Loading Factors, Alan G. Davenport, 536

Homologous Deformations of Tiltable Telescopes, Sebastian von Hoerner, 567

Ill-Conditioned Stiffness Matrices, Jayant M. Shah, 69

Inelastic Beams Under Moment Gradient, with Theodore V. Galambos, 570

Inelastic Buckling and Sidesway of Concrete Frames, Wen F. Chang, 606

Iterative Design and Structural Optimization, Kenneth F. Reinschmidt, C. Allin Cornell, and John F. Brotchie, 134

The John Hancock Center, Fazlur R. Khan, 532

Languages for User-Defined Member Design Processes, Robert D. Logcher, Salvatore G. Mazzotta, and Lavette C. Teague, Jr., 466

Limit Design by Successive Moment Distribution, Carl Berwanger, 646

Local Instability in Plates and Channel Struts, A. C. Walker, 669

Longitudinal Stiffeners for Compression Members, Maurice L. Sharp, 445

Minimum Cost Design of Frames, R. A. Ridha and R. N. Wright, 507

Model for Compression of Elastic-Plastic Cylinders, R. M. Korol and A. N. Sherbourne, 557

Model Studies of Wind Loads on Flat-Top Cylinders, D. M. Purdy, F. J. Maher, and Daniel Frederick, 282

New Method for Exact Analysis of Folded Plates, Paul E. Mast, 581

Optimum Design—Minimum Weight Versus Fully Stressed, Thomas P. Kicher, 24

Plastic Hinging In Reinforced Concrete, Ned H. Burns and Chester P. Siess, 44

Pole Buildings Go Modern, W. A. Norum, 635

Ponding of Rainwater on Flexible Roof Systems, Donald A. Sawyer, 542

POST: Problem-Oriented Subroutine Translator, John W. Melin, 198

Review of Concrete Beams Failing in Shear, Boris Bresler and J. G. MacGregor, 342

Rotational Capacity of Reinforced Concrete Beams, W. Gene Corley, 451

Seismic Resistance of Prestressed Concrete Structures, K. S. Savriev, 385

Slope Deflection and Moment Flow Graphs, Chuan C. Feng and Kenneth A. Stead, 478

Snap-Through Buckling of Framed Triangulated Domes, Rodolfo J. Aguilar, 329

Stability of Rigid Frames with Nonuniform Members, Chu-Kia Wang, 456

Stability of Tensile Cracks in Concrete Beams, Nat W. Krahl, Narbey Khachaturian, and Chester P. Siess, 121

Strength of Longitudinally Stiffened Plate Girders, Peter B. Cooper, 484

Structural Optimization by Nonlinear Programming, Daniel M. Brown and Alfredo H.-S. Ang, 212

Structural Timber Framing in Forest Products Laboratory, Maurice J. Rhude, 376

STRUDL—A Computer System for Structural Design, Robert D. Logcher and Gerald M. Sturman, 620

Synthesis of a Space Truss Based on Dynamic Criteria, J. William Young, Jr. and Henry N. Christiansen, 129

Tabular Decision Logic for Structural Design, Steven J. Fenves, 140

Theoretical Analysis of Suspension Bridges, Saafan A. Saafan, 110

Three-Dimensional Analysis of Pile Foundations, Rudolf Aschenbrenner, 455

Three-Dimensional Analysis of Tier Buildings, William Weaver, Jr. and Mark F. Nelson, 169

Three-Dimensional Suspension Structures, Charles H. Thornton and Charles Birnstiel, 92

Timber in Marine Structures, James R. Ayers and Ralph C. Stokes, 153

Torsional Response of Tapered I-Girders, George C. Lee and Barna A. Szabo, 597

Two Computer Approaches to Subway Design, Winfield O. Salter, 205

Ultimate Load Capacity of Arch Dams, Jorge I. Bustamante and Emilio Rosenblueth, 230

Vibration Frequencies of the Chesapeake Bay Bridge, A. Hughlett Mason and Dean S. Carder, 337

Vibration of Cantilevered Right Triangular Plates, Dallas R. Koerner and Robert R. Snell, 659

Water-Filled Tubular Steel Columns—Fire Protection without Coating, L. G. Seigel, 639

STRUCTURAL ENGINEERING *Continued*
Web Crippling Tests on Hybrid Beams, Charles G. Schilling, 237
A Welded Steel Frame Skyscraper, Ezra Meir, 123
Wind and Movement in Tall Buildings, Fukuei Chang, 352
Wind Loads on Dome-Cylinder and Dome-Cone Shapes, F. J. Maher, 54
Wood—A Reliable Engineering Material, Lyman W. Wood, 96
Wood Engineering in Forestry Laboratories, D. E. Kennedy, 513
Wood-Structural Enigma or Engineering Reality, Joseph A. Liska, 156

STRUCTURES
Buckling of Open Cylindrical Shells, Kuanghan Chu and G. Krishnamoorthy, 367

SUBSIDENCE
Earth Movement at Baldwin Hills Reservoir, Robert B. Jansen, Gordon W. Dukleth, Bernard B. Gordon, Laurence B. James, and Clyde E. Shields, 403
Eight-Berth Marine Terminal in Deep Bay Mud, Eugene L. Sembler, 523
Foundation Clay Shrinkage Caused by Large Trees, Mark J. Hammer and Orville B. Thompson, 86

SUBSURFACE STRUCTURES
Underground Garage Benefits from Innovations, Fritz Kramrisch, 689

SURFACE HEAVING
Subsoils and Foundation Design in Richmond, Va., Leo Casagrande, 70

SURVEYING
A Civil Engineer Looks at Surveying Education, Peter A. Machinis, 56
Concrete Pavement Performance at Ten Civil Airports, Martin L. Cawley, 65
Current Problems in Property Location, Ira M. Tillotson and Charles E. Snyder, 648
Land Survey Implications of Right-of Way Surveys, Edgar H. Swick, 95
Mapping the West: 1789–1900, Robert P. Vreeland, 139
Photo Maps for Engineering Use, Richard O. Mahan, 338
Positive Area Calculations by Coordinates, Francis E. Griggs, Jr., 38
Surveying—The Paradox of Civil Engineering, Robert B. Read, 551

SYSTEMS
Distribution System Equalizing Storage Hydraulics, M. B. McPherson and R. Prasad, 207

TECHNICIANS
Admit Civil Engineering Technicians to ASCE?, 546
Civil Engineers—Professionals or Technicians?, George M. Sicular, 708

TELESCOPES
Homologous Deformations of Tiltable Telescopes, Sebastian von Hoerner, 567

TEMPERATURE
Bibliography on Thermal Pollution: Report by the Committee on Thermal Pollution, Sanitary Engineering Division, ASCE, H. Bruce Gerber, Chmn., 597
Temperature Effects on Clay Soil Consolidation, Robert E. Paaswell, 150

TERMINAL FACILITIES
Planning the Dallas-Ft. Worth Regional Airport, Walther Prokosch, 394

TESTING
AITC Quality Control of Glued Laminated Timbers, Thomas E. Brassell, 639
Aluminum Orthotropic Bridge Deck in Pittsburgh, W. M. Rogerson, et al., 621
Analysis of Data from Stepwise Throttled Pump Test, Gert Aron and Verne H. Scott, 136
Behavior of a Soil Mass Under Dynamic Loading, R. W. Sparrow and A. C. Tory, 32
Behavior of Concrete in Biaxial Compression, George S. Robinson, 393
Buckling of Cylindrical Shells under Axial Compression, A. N. Sherbourne and R. M. Korol, 584
Buckling of Soil-Surrounded Tubes, Ulrich Luscher, 496
Commentary on Welded Cover-Plated Beams, Report of the Subcommittee on Cover Plates, Task Committee on Flexural Members, Structural Division, ASCE, John W. Fisher, Chmn., 594
Computer Analysis of Towers Verified by Testing, Charles F. Beck and Max Zar, 186
Consolidation of Slightly Overconsolidated Soils, Gerald Patrick Raymond, 124
Corner Properties of Cold-formed Steel Shapes, Kenneth W. Karren, 458
Cylindrical Shells Under Ring Loads, Halil Halit Demir, 321
Directional Spectra of Laboratory Wind Waves, Ismail El-Sayed Mobarek, 681
Dispersion in Layered Porous Media, Uri Y. Shamir and Donald R. F. Harleman, 515
Dividing Flow in an Open Channel, Shiu Wai Law and Alan J. Reynolds, 130
Dynamic Soil Strength and Slope Stability, Willard Ellis and V. B. Hartman, 175
Engineering Properties of Simulated Lunar Soils, Eben Vey and John D. Nelson, 487
Experimental Research on Lock Hydraulic Systems, John P. Davis and Thomas E. Murphy, 712
Experimental Study of Two-Layered Flow Through a Sink, D. Grant Huber and T. L. Reid, 615
Experiments on Lateral Dispersion in Porous Media, Wen-Hsiung Li and Fu-Hsiung Lai, 74
Flow Measurements with Fluorescent Tracers, John A. Replogle, Lloyd E. Myers, and Kenneth J. Brust, 28

TESTING *Continued*
Hydro Machinery Laboratory, Maurice L. Albertson and J. Paul Tullis, 684
Large Plastic Deformation of Pressurized Cylinders, Martin A. Salmon, 670
Longitudinal Stiffeners for Compression Members, Maurice L. Sharp, 445
Loop Systems for Measuring Sand-Water Mixtures, Hans A. Einstein and Walter H. Graf, 678
Mixing and Dispersion Studies in San Francisco Bay, Thomas E. Bailey, Charles A. McCullough, and Charles G. Gunnerson, 46
Model Studies of Wind Loads on Flat-Top Cylinders, D. M. Purdy, F. J. Maher, and Daniel Frederick, 282
Model Study of Dynamically Loaded Arch Structures, Don R. Denton and William J. Flathau, 669
NCEL's Ocean Engineering Program, 102
New Concepts in Guardrail Design, Malcolm D. Graham, 291
On-Site Fabrication of Large Steel Pressure Vessels, W. R. Fickett, 348
Partial Demineralization of Brackish Waters, Robert L. Sanks and Warren J. Kaufman, 131
Pile Foundation for Oakland Coliseum, John J. Hallenbeck, Jr., and Robert E. Johnston, 210
Pumping Test to Determine Permeability Ratio, Charles I. Mansur and Rudy J. Dietrich, 680
Rockfill Design—Carters Dam, Fred A. Robeson and Robert L. Crisp, Jr., 25
Runway Traction, Francis J. Rhody, 715
Siting of Manned Lunar Launch Facilities, Arthur G. Porcher, 647
Strength Characteristics of Desiccated Clays, Geoffrey E. Blight, 15
Subsoils and Foundation Design in Richmond, Va. Leo Casagrande, 70
Ten Years of Plowshare, Melvin W. Jackson, 709
Willard Dam—Behavior of a Compressible Foundation, 220

THEORY
Fatigue Characteristics of Flexible Pavement, Hyoungkey Hong, 365

TIDES
Classification System for Estuaries, Bård Glenne, 448

TILES
Steady-State Theories for Drainage, Don Kirkham, 656

TIMBER (Structural)
AITC Quality Control of Glued Laminated Timbers, Thomas E. Brassell, 639
AITC Timber Construction Manual, Russell P. Wibbens, 505
American Lumber Standards Committee, James H. Carr, Jr., 116
Designing with Plywood Structural Components, W. D. Page, 636
Evolution of the Use of Plywood for Structures, David Countryman, 76
Forest Service Research on Structural Use of Wood, Alan D. Freas, 147
A Modern Concept in Timber Truss Design, Edwin L. Morris, 319
Structural Timber Framing in Forest Products Laboratory, Maurice J. Rhude, 376
Wood—A Reliable Engineering Material, Lyman W. Wood, 96
Wood Engineering in Forestry Laboratories, D. E. Kennedy, 513
Wood—Structural Enigma or Engineering Reality, Joseph A. Liska, 156

TIMBER CONSTRUCTION
AITC Timber Construction Manual, Russell P. Wibbens, 505

TOPOGRAPHY
Design and Construction Features: Boundary Project, H. V. Strandberg, 660

TORSION
Three-Dimensional Analysis of Tier Buildings, William Weaver, Jr. and Mark F. Nelson, 169
Torsional Response of Tapered I-Girders, George C. Lee and Barna A. Szabo, 597

TOWERS
Bending and Membrane Equilibrium in Cooling Towers, E. L. Albasiny and D. W. Martin, 137
Compact Analysis for Tower Structures, Alfred H. Palmer, 273
Computer Design of a Tower and Cable System, R. A. Williamson, H. F. Stevenson, and P. W. Van der Pas, 217
On-Site Fabrication of Large Steel Pressure Vessels, W. R. Fickett, 348

TRACERS
Flow Measurements with Fluorescent Tracers, John A. Replogle, Lloyd E. Myers, and Kenneth J. Brust, 28
Mixing and Dispersion Studies in San Francisco Bay, Thomas E. Bailey, Charles A. McCullough, and Charles G. Gunnerson, 46
Radioactive Equilibrium Time, William A. Goldsmith and Eddie Joe Middlebrooks, 93

TRAFFIC
Deficiencies of Urban Transportation Studies, Roy E. Jorgensen, 682
Freeway Planning in Dallas County, Texas, Arthur F. Beck, 14
Optimum Size Seaport, Carl H. Plumlee, 157

TRANSMISSION LINES
Power Generation—Its Status and Outlook, J. George Thon, 541

TRANSPORTATION
Airport Accessibility and Detroit Passengers, Rolla Edward Park, 10
Airport Terminal Facilities, American Society of Civil Engineers—Airport Operators Council International Specialty Conference, Houston, Texas, 000
Deficiencies of Urban Transportation Studies, Roy E. Jorgensen, 682
Floating V/STOL Airport Proposed, Edward G. Nawy and Cooper B. Bright, 424
Freeway Planning in Dallas County, Texas, Arthur F. Beck, 14
Get Me to the Airport on Time, Roger H. Gilman, 420
Meeting Future Surface Transportation Needs, Marshall F. Reed, Jr., 675
Planning the Dallas-Ft. Worth Regional Airport, Walther Prokosch, 394
Progress in Control of Vehicle Emissions, John H. Ludwig, 288
Similarity Laws for Localized Scour, Marion R. Carstens, 62

TRAVERSES
Positive Area Calculations by Coordinates, Francis E. Griggs, Jr., 38

TRIAXIAL TESTS
Large-Scale Testing of Rockfill Materials, Raul J. Marsal, 498

TRIPS
Estimating Urban Trip Production and Attraction, Peter S. Parsonson and Paul D. Cribbins, 650

TRUSSES
Analysis of Vierendeel Truss with Inclined Chords, Hsien-San Tsang, 463
Behavior of Elastic Plastic Trusses with Unstable Bars, Giulio Maier, 73
A Modern Concept in Timber Truss Design, Edwin L. Morris, 319
Suspension Bridge Spans the Orinoco, Paul Lustgarten, 400
Synthesis of a Space Truss Based on Dynamic Criteria, J. William Young, Jr. and Henry N. Christiansen, 129

TUBES
Buckling of Soil-Surrounded Tubes, Ulrich Luscher, 496
Framing Connections for Square Structural Tubing, Richard N. White and Pen Jeng Fang, 415
The John Hancock Center Chicago, utilizes structural tubing, Fazlur R. Khan, 532
Placing the Underwater Tubes for BART, 554
Transient Response of Cylinders to Shear Waves, Hyman Garnet, Jacques Crouzet-Pascal, and Garbiel Isakson, 9

TUNNELING (Excavation)
Construction of Morrow Point Power Plant and Dam, James D. Seery, 3
Equipment Selection for Mangla Dam, Ray N. Atkinson, 284
Record Tunnel Excavation with Boring Machines, D. E. Cannon, 323
Stability of Clay at Vertical Openings, Bengt B. Broms and Hans Bennermark, 544
Tunneling on London's Victoria Line Underground Railway, George S. Dodds, 113

TUNNELS
Placing the Underwater Tubes for BART, 554
Tunneling on London's Victoria Line Underground Railway, George S. Dodds, 113
Waterproofing a Tunnel Under a Canal, Sami Tibshirani, 406

TURBULENCE
Flow Direction Measurement by Hot-Wire Anemometry, J. W. Delleur, 182
Secondary Currents in a Corner, James A. Liggett, Chao-Lin Chiu, and Ling S. Mioa, 115

UNDERWATER CONSTRUCTION
Criteria for Planning an Offshore Pipeline, Joe L. Krieg, 691
Placing Pipeline and Outfalls Under Water, Ark G. Chin and Martin C. Dirks, 700
Placing the Underwater Tubes for BART, 554

UNESCO
International Hydrological Decade Program Abroad, Raymond L. Nace, 187

URBAN DEVELOPMENT
Aesthetic Considerations in City Construction, Vernon F. Jorgensen, 644
Urban Hydrology—A Redirection, D. Earl Jones, 361

URBAN PLANNING
Aesthetic Considerations in City Construction, Vernon F. Jorgensen, 644
Bringing Glamor to Subways, 569
Civil Engineering in City and Regional Planning, Melville C. Branch and L. M. K. Boelter, 649
Meeting Future Surface Transportation Needs, Marshall F. Reed, Jr., 675
Planning the Flatlands Urban Industrial Park, Albert T. Rosselli, 563
Role of the City Engineer in Urban Planning, Douglas W. Talbot, 654
Scale Model of Urban Runoff From Storm Rainfall, Robert A. Grace and Peter S. Eagleson, 573
Scope of the Solid Waste Problem, Wesely E. Gilbertson, 668
Urban Freeways: Architects Join in Their Design, George A. Elliott III, 716
Urban Transportation Research, Charles M. Haar, 642

USCOLD
Joint ASCE—USCOLD Committee on Design Criteria for Large Dams. Design and Construction of Dams, ASCE, 671

UTILITIES
Plowing In Pipelines, William C. Kallberg, 108

VALVES
Hydro Machinery Laboratory, Maurice L. Albertson and J. Paul Tullis, 684
Valve Stroking for Complex Piping Systems, Victor L. Streeter, 98

VELOCITY
Wind Loads on Dome-Cylinder and Dome-Cone Shapes, F. J. Maher, 54

VERRAZANO-NARROWS BRIDGE
Verrazano-Narrows Bridge: Construction of Tower Foundations and Anchorages, Nomer Gray and George H. Decancq, 659
Verrazano-Narrows Bridge: Development and Financing Project, Peter J. Reidy, 627

VIBRATION
Dynamic Analysis of Rings by Finite Differences, Robert E. Ball, 90
Dynamic Response of a Restrained Sphere, Allen T. Hjelmfelt, John F. Carney, III, Lyle F. Mockros, and Seng-Lip Lee, 1
Flexibility in Cylinder Groups Oscillated in Water, Alan D. K. Laird, 36
How the California Water Project Endeavors to Get Uniformly Excellent Concrete, Lewis H. Tuthill, 421
Simulation of Nonstationary Random Process, Masanobu Shinozuka and Y. Sato, 513
Vibration Frequencies of the Chesapeake Bay Bridge, A. Hughlett Mason and Dean S. Carder, 337
Vibration of Cantilevered Right Triangular Plates, Dallas R. Koerner and Robert R. Snell, 659
Vibration of Nonuniform Simply-Supported Beams, Arthur C. Heidebrecht, 392
Wind and Movement in Tall Buildings, Fukuei Chang, 352

VISCOSITY
Dynamic Response of a Restrained Sphere, Allen T. Hjelmfelt, John F. Carney, III, Lyle F. Mockros, and Seng-Lip Lee, 1
Experimental Study of Two-Layered Flow Through a Sink, D. Grant Huber and T. L. Reid, 615

WASTE DISPOSAL
Eutrophication—The New Pollution, Gilbert V. Levin, 433
Fundamentals of Water Pollution Control, William H. Wisely, 556
Getting More for the Water-Pollution Control Dollar, Richard Hazen, 722
Mixing and Dispersion Studies in San Francisco Bay, Thomas E. Bailey, Charles A. McCullough, and Charles G. Gunnerson, 46
The Ruhr and the Delaware, Allen V. Kneese, 200
Scope of the Solid Waste Problem, Wesley E. Gilbertson, 668
Underflow Sewers for Chicago, Milton Pikarsky and Clint J. Keifer, 430
Water Needs in 1999, Vance C. Lischer, 598
Water Supply and Waste Disposal in Alaska Native Communities, K. C. Lauster, 148

WASTE WATER
Wastewater Recharge and Dispersion in Porous Media, John A. Hoopes and Donald R. F. Harleman, 460

WATER
Distribution System Equalizing Storage Hydraulics, M. B. McPherson and R. Prasad, 207
European Practice in Water Quality Control, Walter A. Lyon, 227
Federal Versus State Interests in Water Development, Harvey O. Banks, 683
International Hydrological Decade Program Abroad, Raymond L. Nace, 187

WATER CONSUMPTION
Water Needs in 1999, Vance C. Lischer, 598

WATER DISTRIBUTION
Relationships Among Sprinkler Uniformity Measures, Jack G. Beale and David T. Howell, 657

WATER FLOW
Classification System for Estuaries, Bård Glenne, 448
Computation of Discharge Including Over-Bank Flow, C. J. Posey, 27
Experimental Study of Two-Layered Flow Through a Sink, D. Grant Huber and T. L. Reid, 615
Flow Equation for the Sluice Gate, Nallamuthu Rajaratnam and K. Subramanya, 408
Hydro Machinery Laboratory, Maurice L. Albertson and J. Paul Tullis, 684
Secondary Currents in a Corner, James A. Liggett, Chao-Lin Chiu, and Ling S. Mioa, 115
Simple Tools in a World of Computers, Frederic T. Mavis, 161
Wastewater Recharge and Dispersion in Porous Media, John A. Hoopes and Donald R. F. Harleman, 460

WATER HAMMER
Valve Stroking for Complex Piping Systems, Victor L. Streeter, 98
Waterhammer Analysis by Analog Computers, Don J. Wood, 235
Water-Hammer Charts Including Fluid Friction, David Stephenson, 215

WATER POLLUTION
The Battle to Save Lake Michigan, H. W. Poston, 725
Eutrophication—The New Pollution, Gilbert V. Levin, 433
Fundamentals of Water Pollution Control, William H. Wisely, 556
Hydrology of Water Quality Dilution Requirements, Malcolm F. Kallus and Jack W. Keeley, 214
Mathematical Model for Water Pollution Control Studies, Alvin S. Goodman and William E. Dobbins, 315
Oceanography As an Aid to Engineering in Coastal Waters, Gino Mecarini, 195

WATERPROOFING
Drilled-pier Cofferdam for a Building, Harold Engstrom and Robert Oates, 63
Seepage Prevention with Impermeable Membranes, Charles E. Staff, 277
Waterproofing a Tunnel Under a Canal, Sami Tibshirani, 406

WATER QUALITY
Dustfall as a Source of Water Quality Impairment, Richard E. Johnsen, August T. Rossano, and Robert D. Sylvester, 723
Getting More for the Water-Pollution Control Dollar, Richard Hazen, 722
Hydrology of Water Quality Dilution Requirements, Malcolm F. Kallus and Jack W. Keeley, 214
Impoundment Destratification by Mechanical Pumping, William H. Irwin, James M. Symons, and Gordon G. Robeck, 173
Impoundment Water Quality Changes Caused by Mixing, James M. Symons, William H. Irwin, and Gordon G. Robeck, 79
Is There an East-West Water Conflict?, Floyd E. Dominy, 499
Red Water in South Bend, Phillip Moses, 386
Risk Evaluation in Sewage Treatment Plant Design, Daniel P. Loucks, 183
The Ruhr and the Delaware, Allen V. Kneese, 200
Water Quality in Pumped Storage Reservoirs, John Z. Reynolds, 650

WATER RECLAMATION
The Ruhr and the Delaware, Allen V. Kneese, 200
Water Needs in 1999, Vance C. Lischer, 598

WATER RESOURCES
Comprehensive River Stabilization, Walter C. Carey, 645
The East-West Water Controversy: Both Sides Are Partly Right, Ray K. Linsley, 504
Economics of Ground-Water Recharge, David K. Todd, 695
Evolution of Uses of Cloud-Seeding Technology, Richard A. Schleusener, 476
Federal Versus State Interests in Water Development, Harvey O. Banks, 683
Hydropower Project Output Optimization, Warren A. Hall and Theodore G. Roefs, 711
Kaweah River Water Rights Settlement by Purchase, Stanley M. Barnes, 34
Phreatophytes—Water Use and Potential Water Savings, Dean C. Muckel, 168
Pongolapoort Dam for South African Irrigation, Gerhard Everwyn, 686
Role of Government in Water Resource Development, Ayers Brinser, 318
The Ruhr and the Delaware, Allen V. Kneese, 200
Water Needs in 1999, Vance C. Lischer, 598
Water Resources Site Preservation on Federal Lands, Kenneth W. Sax, 372

WATER RIGHTS
Kaweah River Water Rights Settlement by Purchase, Stanley M. Barnes, 34

WATER SUPPLY
Bibliography on Thermal Pollution: Report by the Committee on Thermal Pollution, Sanitary Engineering Division, ASCE, H. Bruce Gerber, Chmn., 597
The East-West Water Controversy: Both Sides Are Partly Right, Ray K. Linsley, 504
International Hydrological Decade Program Abroad, Raymond L. Nace, 187
Is There an East-West Water Conflict?, Floyd E. Dominy, 499
Mathematical Model for Water Pollution Control Studies, Alvin S. Goodman and William E. Dobbins, 315
Plastic Pipe—A Progress Report, Jack W. Pierce, 307
Seepage Prevention with Impermeable Membranes, Charles E. Staff, 277
Water Needs in 1999, Vance C. Lischer, 598
Water Supply and Waste Disposal in Alaska Native Communities, K. C. Lauster, 148

WATER TREATMENT
The Battle to Save Lake Michigan, H. W. Poston, 725
Diatomite Filtration Equation for Various Septa, James H. Dillingham, John L. Cleasby, and E. Robert Baumann, 58
Getting More for the Water-Pollution Control Dollar, Richard Hazen, 722
Red Water in South Bend, Phillip Moses, 386
Water Purification by Forced-Flow Electrophoresis, Fredrick C. Cooper, Quentin M. Mees, and Milan Bier, 674
Water Supply and Waste Disposal in Alaska Native Communities, K. C. Lauster, 148

WATER USE
The East-West Water Controversy: Both Sides Are Partly Right, Ray K. Linsley, 504
Is There an East-West Water Conflict?, Floyd E. Dominy, 499

WATERWAYS (Transportation)
By-Passing and Back-Passing With Reference to Florida, Per M. Bruun, 146
Classification System for Estuaries, Bård Glenne, 448
Comprehensive River Stabilization, Walter C. Carey, 645
Control of Obnoxious Aquatic Plants in the Southeast, Otis M. Jernigan, Angelo Tabita, and William E. Wunderlich, 673
Experimental Research on Lock Hydraulic Systems, John P. Davis and Thomas E. Murphy, 712
Flexibility in Cylinder Groups Oscillated in Water, Alan D. K. Laird, 36
Natural Indicators of Estuarine Sediment Movement, John V. Byrne and L. D. Kulm, 449
A Navigation Lock That is Also a Spillway, Anton M. Grzywienski, 313
New York State's Unique Canal System, Earl Scothon, 330
Planning and Design of a Low-Weir Section Jetty, Nels C. Magnuson, 23
Shallow Water Waves in Canals of Variable Section, E. V. Laitone, 87
Stable Channels with Gravel-Paved Beds, Rolf Kellerhals, 473

WAVES
Abstracts of Papers, Tenth Conference on Coastal Engineering, Coastal Engineering Research Council, Waterways and Harbors Division, ASCE, M. P. O'Brien, Chmn., 642
Diffraction of Ocean Waves About a Breakwater, Charles T. Morrow, 454
Directional Spectra of Laboratory Wind Waves, Ismail El-Sayed Mobarek, 681
Dynamic Response of a Lined Rigid Inclusion, Shui Ho and Robert J. Hansen, 295
Flexibility in Cylinder Groups Oscillated in Water, Alan D. K. Laird, 36
Investigation of Ship-Generated Waves, Robert M. Sorensen, 550
Ocean Wave Force Instrumentation, Thomas L. Russell, Volkmar Schoettle, and Robert G. Chown, 491
Proceedings of Tenth Conference on Coastal Engineering—1966, 688
Shallow Water Waves in Canals of Variable Section, E. V. Laitone, 87
Spectral Analysis of Sand Waves, Carl F. Nordin, Jr. and James H. Algert, 586
Unsteady Flow of Solid-Liquid Suspension, Don J. Wood and T. Y. Kao, 142
Viscoelastic Wave Interaction with Cylindrical Cavity, Isaac M. Daniel, 151
Wave Forces on Piling for Narrow-Band Spectra, Leon Emry Borgman, 349
Wave Propagation in Elastic-Plastic Solids, R. L. Bjork and C. Y. Liu, 718
Wave Statistics from Hurricane Dora, J. Ian Collins, 163

WEATHER MODIFICATION
Evolution of Uses of Cloud-Seeding Technology, Richard A. Schleusener, 476

WEIRS
Constructing a Temporary Stream Gaging Station, Perry H. Rahn and M. Todd Giddings, 693
Planning and Design of a Low-Weir Section Jetty, Nels C. Magnuson, 23

WELDING
Commentary on Welded Cover-Plated Beams, Report of the Subcommittee on Cover Plates, Task Committee on Flexural Members, Structural Division, ASCE, John W. Fisher, Chmn., 594
Design Data for High-Yield-Strength Alloy Steel, Geerhard Haaijer, 226
Framing Connections for Square Structural Tubing, Richard N. White and Pen Jeng Fang, 415
On-Site Fabrication of Large Steel Pressure Vessels, W. R. Fickett, 348
Tulsa Exposition Building—Hanging Cantilevers Provide Cover Framing, Melvin L. Sedlacek with Bert E. Griffin, 222
A Welded Steel Frame Skyscraper, Ezra Meir, 123

WELLS
Drainage by Pumped Wells in Welton-Mohawk District, Theodore H. Moser, 486

WIND (Meteorology)
Atmospheric Sciences and the Engineer, Earl G. Droessler, 154
Directional Spectra of Laboratory Wind Waves, Ismail El-Sayed Mobarek, 681
Gust Loading Factors, Alan G. Davenport, 536
The John Hancock Center, Chicago, Fazlur R. Khan, 532
Similitude Problems in Building Aerodynamics, Hans J. Leutheusser and W. Douglas Baines, 630
Wind and Movement in Tall Buildings, Fukuei Chang, 352
Wind Loads on Dome-Cylinder and Dome-Cone Shapes, F. J. Maher, 54

ZONING
Development of Space Launch Facilities, Bradley L. Baker, 41

AUTHOR INDEX

(including Memoirs of deceased members)

ABBOTT, PHILLIP A.
Arching for Vertically Buried Prismatic Structures, 488

AGGARWALA, B. D.
Bending of Parallelogram Plates, 309

AGUILAR, RODOLFO J.
Snap-Through Buckling of Framed Triangulated Domes, 329

ALBASINY, E. L.
Bending and Membrane Equilibrium in Cooling Towers, 137

ALBERTSON, LELAND C., JR.
See Gerald M. Sturman

ALBERTSON, MAURICE L.
Hydro Machinery Laboratory, 684

ALEXANDER, ROBERT L.
How to Publish and Perish, 332

ALGERT, JAMES H.
See Carl F. Nordin, Jr.

ALLEN, CHESTER LAWRENCE
Memoir of, 736

ALLTUCKER, JOHN W.
Equipment Replacement Decisions, 202

AMMANN, OTHMAR HERMANN
Memoir of, 734

ANG, ALFREDO H.-S
See Daniel M. Brown

ANTEBI, JOSEPH
Computer Analysis of the F-111 Wing Assembly, 30

ANTONINO, RONALD A.
Steel and Corrosion—Some Methods of Protection, 170

APPEL, DAVID W.
Pressure Pulsations in Flow Through Branched Pipes, 612

ARGAMAN, Y.
See M. Rebhun

ARON, GERT
Analysis of Data from Stepwise Throttled Pump Test, 136

ASCHENBRENNER, RUDOLF
Three-Dimensional Analysis of Pile Foundations, 455

ATKINSON, RAY N.
Equipment Selection for Mangla Dam, 284

AYERS, JAMES R.
Timber in Marine Structures, 153

BAREFOOT, A. DUDLEY
See John F. Stone

BAILEY, THOMAS E.
Mixing and Dispersion Studies in San Francisco Bay, 46

BAINES, W. DOUGLAS
See Hans J. Leutheusser

BAKENHUS, REUBEN EDWIN
Memoir of, 737

BAKER, BRADLEY L.
Development of Space Launch Facilities, 41

BAKER, ROBERT F.
Materials Control and Test Procedures, 17

BALIGH, ALY
See Kamel F. Saad

BALL, ROBERT E.
Dynamic Analysis of Rings by Finite Differences, 90

BANKS, HARVEY O.
Federal Versus State Interests in Water Development, 683

BARENFANGER, C. W.
Soil-Cement Base for a Runway, 418

BARNES, STANLEY M.
Kaweah Water Rights Settlement by Purchase, 34

BARNEY, GEORGE B.
See Edwin C. Rossow

BAUER, HELMUT F.
Response of Liquid in a Rectangular Container, 197

BAUMANN, E. ROBERT
See James H. Dillingham

BEALE, JACK G.
Relationships Among Sprinkler Uniformity Measures, 657

BECK, ARTHUR F.
Freeway Planning in Dallas County, Texas, 14

BECK, CHARLES F.
Computer Analysis of Towers Verified by Testing, 186

BELL, JAMES M.
Dimensionless Parameters for Homogeneous Earth Slopes, 521

BENNERMARK, HANS
See Bengt B. Broms

BERG, PAUL H.
Integrated Operation of Reservoirs, 144

BERMAN, RAY R.
Simulation As a Problem-Solving Technique, 208

BERWANGER, CARL
Limit Design by Successive Moment Distribution, 646

BHAVNAGRI, VIRAF S.
Flood Proofing in a Flood Plain: A Stochastic Model, 179

BIER, MILAN
See Fredrick C. Cooper

BILLINGTON, DAVID P.
Holland—Between River and Sea, 417

BIRNSTIEL, CHARLES
See Charles H. Thornton

BISWAS, ASIT K.
Hydropower Developments in India, 48

BITTINGER, MORTON W.
See Ali Eshett

BJORK, R. L.
Wave Propagation in Elastic-Plastic Solids, 718

BLAIR, W. H.
See H. C. Cox

BLAISDELL, FRED W.
Hydraulic Efficiency in Culvert Design, 57

BLAKEY, LEWIS H.
Structural Design of Large Space Chambers, 4

BLANCHARD, BRUCE J.
See Monroe A. Hartman

BLIGHT, GEOFFREY E.
Strength Characteristics of Desiccated Clays, 15

Effective Stress Evaluation for Unsaturated Soils, 166

BOELTER, L. M. K.
See Melville C. Branch

BORCHARDT, JACK A.
See Eric Davis

BORGMAN, LEON EMRY
Wave Forces on Piling for Narrow-Band Spectra, 349

BOYLE, WILLIAM C.
See James A. Mueller

BRANCH, MELVILLE C.
Civil Engineering in City and Regional Planning, 649

BRANIGAN, GEORGE F.
Civil Engineering—Its History, 297

BRASSELL, THOMAS E.
AITC Quality Control of Glued Laminated Timbers, 639

BRECHTING, FRANK J., JR.
The First Hot-Dip Galvanized Bridge in the U.S., 575

BREED, JOHN W.
Books on Estimating and Costs, 359

BREMSER, LAWRENCE W.
Regional Solid Wastes Management, 559

BRESLER, BORIS
Review of Concrete Beams Failing in Shear, 342

BRIGHT, COOPER B.
See Edward G. Nawy

BRINSER, AYERS
Role of Government in Water Resource Development, 318

BROMS, BENGT B.
Stability of Clay at Vertical Openings, 544

BROTCHIE, JOHN F.
See Kenneth F. Reinschmidt

BROWN, COLIN B.
See Robert L. Taylor

BROWN, DANIEL M.
Structural Optimization by Nonlinear Programming, 212

BROWNE, HOWARD C., Chmn.
Selected Abstracts on Structural Applications of Plastics, 655

BROWN, STEPHEN F.
Subgrade Stress and Deformation Under Dynamic Load, 398

BRUSH, HAROLD MORTIMER
Memoir of, 738

BRUST, KENNETH J.
See John A. Replogle

BRUUN, PER M.
By-Passing and Back-Passing with Reference to Florida, 146

BUGLIARELLO, GEORGE
See Viraf S. Bhavnagri

BURGY, ROBERT H.
See George J. Kriz

BURNS, NED H.
Plastic Hinging in Reinforced Concrete, 44

BUSHNELL, DAVID
Machine Computation of Trigonometric Functions, 99

BUSTAMANTE, JORGE I.
Ultimate Load Capacity of Arch Dams, 230

BUTCHER, WILLIAM S.
Dynamic Programming for Project Cost-Time Curves, 39

BYRNE, JOHN V.
Natural Indicators of Estuarine Sediment Movement, 449

CANALE, RAYMOND P.
See Wen-Hsiung Li

CANNON, D. E.
Record Tunnel Excavation with Boring Machines, 323

CARDER, DEAN S.
See A. Hughlett Mason

CAREY, WALTER C.
Comprehensive River Stabilization, 645

CAREY, W. N., JR.
Keeping Afloat on the Fact Flood, 335

CARNEY, JOHN F., III
See Allen T. Hjelmfelt

CARR, JAMES H., JR.
American Lumber Standards Committee, 116

CARROLL, WILLIAM J.
Engineering Education—A Consultant's View, 435

CARSTENS, MARION R.
Similarity Laws for Localized Scour, 62
Graphs for Locating the Line of Seepage in an Earth Dam, 328

CARTER, K. E.
Concrete Pavements Tailored to Traffic, 299

CASAGRANDE, ARTHUR
Role of the "Calculated Risk" in Earthwork and Foundation Engineering, 530

CASAGRANDE, LEO
Subsoils and Foundation Design in Richmond, Va., 70

CASSANO, R. C.
Beauty and the San Mateo Creek Bridge, 601

CAWLEY, MARTIN L.
Concrete Pavement Performance at Ten Civil Airports, 65

CEDERGREN, HARRY R.
Grain Size vs Dollars for Drainage Aggregates, 608

CELLA, PAUL
Graphical Comparison of Uniform Flow in Open Channels, 341

CHANG, FU-KUEI
Wind and Movement in Tall Buildings, 352

CHANG, WEN F.
Inelastic Buckling and Sidesway of Concrete Frames, 606

CHAO, HUANG
Uncoupling Method for Diagonal-Band-Matrix Equation, 346

CHAPPELEAR, D. L.
Innovations in the Laying and Bedding of Pipe, 692

CHARMONMAN, SRISAKDI
Coastal Parallel Canals with Intermediate Drains, 223

CHILDS, S. BART
See Robert C. Cornforth

CHIN, ARK G.
Placing Pipeline and Outfalls Under Water, 700

CHIU, CHAO-LIN
Factors Determining the Strength of Secondary Flow, 402

CHIU, CHAO-LIN
Stochastic Model of Motion of Solid Particles, 294
See James A. Liggett

CHOPRA, ANIL K.
Earthquake Response of Earth Dams, 138

CHOWN, ROBERT G.
See Thomas L. Russell

CHITALE, SHRIKRISHNA V.
See Chintaman V. Gole

CHOPRA, ANIL K.
See Ray W. Clough

CHRISTIANSEN, HENRY N.
See J. William Young, Jr.

CHU, KUANG-HAN
Buckling of Open Cylindrical Shells, 367

CHUCK, ROBERT T.
Perimeter Drainage to Protect Urban Lands, 61

CLARK, GEORGE W., JR.
Pipe Joints Limit Infiltration, 83

CLEASBY, JOHN L.
See James H. Dillingham

CLOTTS, HERBERT VANE
Memoir of, 739

CLOUGH, RAY W.
Earthquake Stress Analysis in Earth Dams, 662

COHEN, EDWARD
Criticism and the Advancement of Building Engineering, 350

COLACO, JOSEPH P.
Behavior of Splices in Beam-Column Connections, 562
See Fazlur R. Khan

COLLINS, J. IAN
Wave Statistics from Hurricane Dora, 163

COOPER, FREDRICK C.
Water Purification by Forced-Flow Electrophoresis, 674

COOPER, PETER B.
Strength of Longitudinally Stiffened Plate Girders, 484

COPEN, MERLIN D.
Replacing East Canyon Dam While Operations Continue, 100

COPP, HOWARD D.
See Clifton W. Johnson

CORLEY, W. GENE
Rotational Capacity of Reinforced Concrete Beams, 451

CORNELL, C. ALLIN
Bounds on the Reliability of Structural Systems, 452
See Gerald M. Sturman
See Kenneth F. Reinschmidt

CORNFORTH, ROBERT C.
Computer Analysis of Two-Hinged Circular Arches, 477

CORRALES, MANUEL F.
See Carlos A. Ulate

CORREALE, WILLIAM H.
Building Codes, 141

COSTELLO, GEORGE A.
Stability of Transmission Line Structures, 517

COTTON, JAMES ARNOLD
Memoir of, 740

COUNTRYMAN, DAVID
Evolution of the Use of Plywood for Structures, 76

COX, H. C.
Homestake Collection System: Intakes and Conduits, 289

CRIBBINS, PAUL D.
See Peter S. Parsonson

CRISP, ROBERT L., JR.
See Fred A. Robeson

CRISSEY, MERRILL E.
Service Structure Concepts for Post-Saturn Rockets, 296

CROOK, LEONARD T.
Federal Employee-Management Cooperation: E. O. 10988, 665

CROUZET-PASCAL, JACQUES
See Hyman Garnet

CULPEPPER, FRED C., JR.
Gas Pipeline Safety by Design, 333

CULVER, CHARLES G.
Reconstructing the ASCE Journals, 287

CYRUS, NANCY JANE
Finite Difference Accuracy in Structural Analysis, 200

DAGAN, GEDEON
Steady Drainage of Two-Layered Soil, 638

DALE, JOHN M.
Sulphur Aggregate Concrete, 698

DANIEL, ISAAC M.
Viscoelastic Wave Interaction with Cylindrical Cavity, 151

DAVE, P. C.
Moments in Buried Box Culverts, 564

DAVENPORT, ALAN G.
Gust Loading Factors, 536

DAVIDSON, DONALD McL.
The Legal Implications of Quality Control, 612

DAVIES, J. MICHAEL
Collapse and Shakedown Loads of Plane Frames, 528

DAVIS, ERIC
Sand Filtration of Particulate Matter, 503

DAVIS, JOHN P.
Experimental Research on Lock Hydraulic Systems, 712

DAWDY, DAVID R.
Mathematical Models of Catchment Behavior, 593

DECANCQ, GEORGE H.
See Nomer Gray

DELLEUR, J. W.
Flow Direction Measurement by Hot-Wire Anemometry, 182

DEMIR, HALIL HALIT
Cylindrical Shells Under Ring Loads, 321

DEMPSEY, JOHN GODDARD
Memoir of, 741

DENTON, DON R.
Model Study of Dynamically Loaded Arch Structures, 669

DICKER, DANIEL
Aerodynamic Stability of H Sections, 174

DIETRICH, RUDY J.
See Charles I. Mansur

DILLINGHAM, JAMES H.
Diatomite Filtration Equations for Various Septa, 58
Prediction of Diatomite Filter Cake Resistance, 117

DIRKS, MARTIN C.
See Ark G. Chin

DOBBINS, WILLIAM E.
See Alvin S. Goodman

DODDS, GEORGE S.
Tunneling on London's Victoria Line Underground Railway, 113

DOMINY, FLOYD E.
Design of Desilting Works for Irrigation Systems, 390
Is There an East-West Water Conflict?, 499

DONG, STANLEY B.
Analysis of Laminated Shells of Revolution, 110

DRNEVICH, VINCENT P.
Transient Loading Tests on a Circular Footing, 49

DROESSLER, EARL G.
Atmospheric Sciences and the Engineer, 154

DUKLETH, GORDON W.
See Robert B. Jansen

DUNCAN, JAMES M.
Anisotropy and Stress Reorientation in Clay, 80
Strength Variation Along Failure Surfaces in Clay, 64

DUNDURS, JOHN
Direct Analysis of Continuous Beam-Columns, 663

EAGLESON, PETER S.
See Robert A. Grace

EINSTEIN, HANS A.
Loop Systems for Measuring Sand-Water Mixtures, 678

EL-DIB, M. A.
Dichromate Versus Ceric Sulphate in COD Determination, 368

ELDER, CLAYBURN COMBES
Memoir of, 741

ELIAS, ZIAD M.
Cartesian Formulation of Membrane Theory, 345

ELLIOTT, GEORGE A., III
Urban Freeways: Architects Join in Their Design, 716

ELLIS, WILLARD
Dynamic Soil Strength and Slope Stability, 175

ENGELBRECHT, R. S.
See Mriganka M. Ghosh

ENGLAND, CHARLES B.
See Heggie N. Holtan

ENGSTROM, HAROLD
Drilled-pier Cofferdam for a Building, 63

ERRERA, SAMUEL J.
Columns and Beams Braced by Diaphragms, 111

ESHETT, ALI
Stream-Aquifer System Analysis, 628

ESRIG, MELVIN I.
Electrokinetic Stabilization of an Illitic Clay, 502

EVANS, GEORGE
Anticipated Foundation Movement Affects Design, 219

EVERWYN, GERHARD
Pongolapoort Dam for South African Irrigation, 686

FANG, PEN JENG
See Richard N. White

FARIS, CHARLES O.
Advance Planning Speeds Construction of Mossyrock Dam, 631

FATEHI, T. T.
Sectional Properties of T-Sections, 363

FELTON, LEWIS P.
See Hagen R. Mauch

FENG, CHUAN C.
Slope Deflection and Moment Flow Graphs, 478

FENVES, STEVEN J.
Tabular Decision Logic for Structural Design, 140
See Edward L. Murphee, Jr.

FETZER, CLAUDE A.
Electro-osmotic Stabilization of West Branch Dam, 540

FICHTER, JOHN A.
Planned Community Development Over Rock, 396

FICKETT, W. R.
On-Site Fabrication of Large Steel Pressure Vessels, 348

FILHO, FERNANDO VENÂNCIO
Dynamic Influence Lines of Beams and Frames, 444

FINN, W. D. LIAM
Earthquake Stability of Cohesive Slopes, 676

FISCHER, FRED, JR.
Design of Cable Roof for Madison Square Garden, 355

FISCHERSTROM, CLAES N. H.
Settling of Activated Sludge in Horizontal Tanks, 474

FISHER, GORDON P.
See Samuel J. Errera

FISHER, JOHN W.
Commentary on Welded Cover-Plated Beams, 594
See Robert Kormanik

FLATHAU, WILLIAM J.
See Don R. Denton

FLEMING, JOHN F.
Drift Study of Tapered Frameworks, 375

FLETCHER, ALAN G.
Flood Routing in an Irregular Channel, 237

FOK, YU-SI
One-Dimensional Infiltration into Homogeneous Soil, 19

FOWLER, JAMES DUNCAN
Memoir of, 742

FOX, J. L.
Steels for Hydroelectric Applications, 636

FREAS, ALAN D.
Forest Service Research on Structural Use of Wood, 147

FREDERICK, DANIEL
See D. M. Purdy

FULTON, ROBERT E.
See Nancy Jane Cyrus

FUNGAROLI, ALFONSO A.
See Irwin Remson

GALAMBOS, THEODORE V.
See Maxwell G. Lay

GARDE, R. J.
Resistance Relationships for Alluvial Channel Flow, 275

GARG, SATYA PRAKASH
Distribution of Head at a Rectangular Conduit Outlet, 703

GARNET, HYMAN
Transient Response of Cylinders to Shear Waves, 9

GARTON, JAMES E.
See John F. Stone

GEMEINHARDT, JOHN P., JR.
See Melvin I. Esrig

GERBER, H. BRUCE
Bibliography on Thermal Pollution, 597

GERSTLE, KURT H.
See Roy R. Russell

GERWICK, BEN C., JR.
Slurry-Trench Techniques in Deep Foundation Construction, 704

GHOLIZADEH, M. B.
Proposed Project for a Salinity Problem at Abadan, 12

GHOSH, MRIGANKA M.
Precipitation of Iron in Aerated Ground Waters, 653

GIDDINGS, M. TODD
See Perry H. Rahn

GILBERTSON, WESELY E.
Scope of the Solid Waste Problem, 668

GILMAN, ROGER H.
Get Me to the Airport on Time, 420

GLENN, JERRY L.
See Edmund A. Prych

GLENNE, BÅRD
Classification System for Estuaries, 448

GLOYNA, E. L.
See D. L. Chappelear

GODAT, DAVID WALKER
Memoir of, 743

GOLDSMITH, WILLIAM A.
Radioactive Equilibrium Time, 93

GOLE, CHINTAMAN V.
Inland Delta Building Activity of Kosi River, 37

GOODMAN, ALVIN S.
Mathematical Model for Water Pollution Control Studies, 315

GRACE, ROBERT A.
Scale Model of Urban Runoff From Storm Rainfall, 573

GRAF, WALTER H.
See Hans A. Einstein

GRAHAM, MALCOLM D.
New Concepts in Guardrail Design, 291

GRANT, ARVID
Economy, Efficiency, and Esthetics in Small Concrete Bridges, 432

GRANT, LELAND F.
Grouting a Dam Cutoff in Cavernous Limestone, 706

GRAVES, EUGENE A.
Improved Method of Flood Routing, 379

GRAY, NOMER
Verrazano-Narrows Bridge: Construction of Tower Foundations and Anchorages, 659

GREELEY, SAMUEL ARNOLD
Memoir of, 735

GREGORY, MALCOLM S.
Professional Training of Engineers, 577

GRESZCZUK, LONGIN B.
Effect of Foreign Inclusions on Properties of Solids, 516

GRIFFIN, WILLIAM H.
Piezometers Monitor Waterfront Fill, 440

GRIGGS, FRANCIS E., JR.
Positive Area Calculations by Coordinates, 38

GRZYWIENSKI, ANTON M.
A Navigation Lock That is Also a Spillway, 313

GUITJENS, J. C.
See J. N. Luthin

GUNNERSON, CHARLES G.
See Thomas E. Bailey

GUTMANN, PHILIP W.
Expansive Cements in the United States, 595

HAAIJER, GEERHARD
Design Data for High-Yield-Strength Alloy Steel, 226

HAAR, CHARLES M.
Urban Transportation Research, 642

HALL, JOHN R.
See Vincent P. Drnevich

HALL, WARREN A.
Hydropower Project Output Optimization, 711

HALLENBECK, JOHN J., JR.
Pile Foundation for Oakland Coliseum, 210

HALM, HAROLD J.
Minor Concessions to Contractors Will Produce More Economical Concrete Pavements, 619

HALMOS, E. E., JR.
Engineering and Construction for a Junior High Curriculum, 306

HAMILTON, WALLIS S.
See Alan G. Fletcher

HAMMER, MARK J.
Foundation Clay Shrinkage Caused by Large Trees, 86

HAMPE, PETER A.
See John Dundurs

HANDY, RICHARD L.
Chemical Stabilization of an Active Landslide, 381

HANER, N. W.
New Deck Appeases Bridge of the Gods, 605

HANSEN, ROBERT J.
See Shui Ho

HANSEN, VAUGHN E.
See Yu-Si Fok

HANSON, ROBERT D.
Comparison of Static and Dynamic Hysteresis, 204

HARDER, JAMES A.
Analog Modeling the California Delta Tidal System, 702

HARLEMAN, DONALD R. F.
See John A. Hoopes
See Uri Y. Shamir

HARTMAN, MONROE A.
Hydrologic Influences of a Flood Control Program, 603

HARTMAN, V. B.
See Willard Ellis

HAYES, JOHN M.
Economy of Corrosion-Resistant Steel in Highway Bridges, 81

HAYS, JAMES R.
See Edward L. Thackston

HAZEN, RICHARD
Getting More for the Water-Pollution Control Dollar, 722

HEAD, JAMES A.
Highway Safety Elements in Aesthetic Design, 190

HEIDEBRECHT, ARTHUR C.
Vibration of Nonuniform Simply-Supported Beams, 392

HELVENSTON, HUMBOLDT REY, I
Memoir of, 744

HERRMANN, GEORGE
Vibration of Thin Shells and Initial Stress, 717

HICKOK, ROBERT B.
See Kenneth G. Renard

HINKLEY, A. T.
Analysis of a Shear Wall Supported by a Beam, 614

HJELMFELT, ALLEN T.
Dynamic Response of a Restrained Sphere in a Fluid, 1

HO, SHUI
Dynamic Response of a Lined Rigid Inclusion, 295

HOEFLE, KARL FREDERICK
Memoir of, 745

HOGGATT, H. G.
Making CPM Work, 369

HOLLAND, FRED J.
Chlorinated Rubber as a Concrete Curing Material, 340

HOLTAN, HEGGIE N.
Hydrologic Characteristics of Soil Types, 479

HONG, HYOUNGKEY
Fatigue Characteristics of Flexible Pavement, 365

HOOPES, JOHN A.
Wastewater Recharge and Dispersion in Porous Media, 460

HORNBERGER, G. M.
See Irwin Remson

HOTTENSTEIN, H. L.
Landscaping Urban Expressways, 628

HOWARD, AMSTER K.
See Howard C. Pettibone

HOWELL, DAVID T.
See Jack G. Beale

HUBBELL, DAVID W.
See Edmund A. Prych

HUBER, D. GRANT
Experimental Study of Two-Layered Flow Through a Sink, 615

HUDSON, WILLIAM R.
Cracked Pavement Slabs with Nonuniform Support, 104

HUFFMAN, THOMAS ELLSWORTH
Memoir of, 746

HUMPHREY, HUBERT H.
Ocean Engineering—Background and Prospects, 119

HUSSEY, M. J. L.
General Theory of Cyclically Symmetric Frames, 589

HUSTON, JOHN
Foreign Jobs—How to Locate, Apply and Qualify for them, 634
Opportunities for Engineers on Foreign Projects, 388

HUNT, HAL W.
Engineered Structures at Expo 67, 310

INGRAM, WILLIAM T.
Air Research Monitoring Station System, 33

IRWIN, WILLIAM H.
Impoundment Destratification by Mechanical Pumping, 173
See James M. Symons

ISAAC, PAUL HENRY
Memoir of, 747

ISAKSON, GARBIEL
See Hyman Garnet

ISGARD E.
See Claes N. H. Fischerstrom

IYENGAR, SRINIVASA H.
See Fazlur R. Khan

JACKSON, MELVIN W.
Earthquake Requirements in Building Code, 427
Ten Years of Plowshare, 709

JACOBS, M. H.
See R. C. Cassano

JAMES, LAURENCE B.
See Robert B. Jansen

JANSEN, ROBERT B.
Earth Movement at Baldwin Hills Reservoir, 403

JENIKE, ANDREW W.
Denting of Circular Bins with Eccentric Drawpoints, 481

JENKINS, ROBERT A.
Internal Sand Cleaning of Pipelines, 656

JENNINGS, PAUL C.
Force-Deflection Relations From Dynamic Tests, 193

JERNIGAN, OTIS M.
Control of Obnoxious Aquatic Plants in the Southeast, 673

JEZDINSKY, VLADIMIR
See Hunter Rouse

JOHNSON, CLIFTON W.
Drop-Box Weir for Sediment-Laden Flow Measurement, 52

JOHNSON, RICHARD E.
Dustfall as a Source of Water Quality Impairment, 723

JOHNSTON, ROBERT E.
See John J. Hallenbeck, Jr.

JONES, D. EARL
Urban Hydrology—A Redirection, 361

JONES, RUSSEL C.
Structural Metal Composites, 50

JORGENSEN, ROY E.
Deficiencies of Urban Transportation Studies, 682

JORGENSEN, VERNON F.
Aesthetic Considerations in City Construction, 644

KALLBERG, WILLIAM C.
Plowing In Pipelines, 108

KALLUS, MALCOLM F.
Hydrology of Water Quality Dilution Requirements, 214

KAO, PAUL W.
Calculation of Diameter of Stretched Rubber Gasket, 622

KAO, T. Y.
See Don J. Wood

KARAGOZIAN, JOHN
See Moshe F. Rubinstein

KARREN, KENNETH W.
Corner Properties of Cold-Formed Steel Shapes, 458
Effects of Cold-Forming on Light-Gage Steel Members, 470

KAUFMAN, ROBERT I.
Stability of Atchafalaya Levees, 235

KAUFMAN, WARREN J.
See Robert L. Sanks

KAWALA, EDWARD L.
Cement-Treated Subbase Practice in U.S. and Canada, 443

KAWANO, YASUO
Steel Deck Bridge for Japan's Largest Lake, 184

KEELEY, JACK W.
See Malcolm F. Kallus

KEESE, CHARLES J.
Break-Away Sign Supports Enhance Highway Safety, 164

KEIFER, CLINT J.
See Milton Pikarsky

KELLERHALS, ROLF
Stable Channels with Gravel-Paved Beds, 473

KENNEDY, D. E.
Wood Engineering in Forestry Laboratories, 513

KERLIN, REGINALD
Asphalt Paving for a New Airport in Alabama, 599

KHACHATURIAN, NARBEY
See Nat W. Krahl

KHAN, FAZLUR R.
Computer Design of 100-Story John Hancock Center, 162
The John Hancock Center, 532

KICHER, THOMAS P.
Optimum Design—Minimum Weight Versus Fully Stressed, 24

KING, GEORGE J. W.
Seepage Under a Rectangular Dam, 274

KIRKHAM, DON
Steady-State Theories for Drainage, 656

KLOSNER, JEROME M.
See Howard S. Levine

KNEESE, ALLEN V.
The Ruhr and the Delaware, 200

KOERNER, DALLAS R.
Vibration of Cantilevered Right Triangular Plates, 659

KOKINOPOULOS, FELIX
Aseismic Design of Multistory Systems, 301

KORMANIK, ROBERT
Bearing-Type Bolted Hybrid Joints, 661

KOROL, R. M.
Model for Compression of Elastic-Plastic Cylinders, 557
See A. N. Sherbourne

KRAHL, NAT W.
Stability of Tensile Cracks in Concrete Beams, 121

KRAMRISCH, FRITZ
Underground Garage Benefits from Innovations, 689

KRENKEL, PETER A.
See Edward L. Thackston

KRIEG, JOE L.
Criteria for Planning an Offshore Pipeline, 691

KRISHNAMOORTHY, G.
See Kuang-han Chu

KRIZ, GEORGE J.
Analyses of Parameters of an Unconfined Aquifer, 199

KULM, L. D.
See John V. Byrne

LAI, FU-HSIUNG
See Wen-Hsiung Li

LAIRD, ALAN D. K.
Flexibility in Cylinder Groups Oscillated in Water, 36

LAITONE, E. V.
Shallow Water Waves in Canals of Variable Section, 87

LAKSHMANA RAO, NAGAR S.
Characteristics of M1 Backwater Curves, 224

LAMBE, T. WILLIAM
Student Research on Building Foundations, 543

LARSEN, IAN
See Claes N. H. Fischerstrom

LASZLO, GEORGE
A Prestressed, Lightweight Concrete Bridge Spans 131 Ft, 126

LAUSTER, K. C.
Water Supply and Waste Disposal in Alaska Native Communities, 148

LAW, SHIU WAI
Dividing Flow in an Open Channel, 130

LAWSON, JOHN D.
See Alan K. Parkin

LAY, MAXWELL G.
Inelastic Beams Under Moment Gradient, 570

LEA, WILLIAM CHESTER
Memoir of, 748

LEARNED, ALBERT PREISACH
Memoir of, 749

LEE, GEORGE C.
Torsional Response of Tapered I-Girders, 597

LEE, KENNETH L.
Cyclic Stress Conditions Causing Liquefaction of Sand, 524
Dynamic Strength of Anistropically Consolidated Sand, 492
See H. Bolton Seed

LEE, SENG-LIP
See Allen T. Hjelmfelt
See Edwin C. Rossow
See John Dundurs

LEET, KENNETH M.
Study of Stability in the Hyperbolic Paraboloid, 664

LENZ, ARNO T.
See Keith E. Saxton

LEONARD, JOHN W.
Inflatable Shells: Pressurization Phase, 24

LEUTHEUSSER, HANS J.
Similitude Problems in Building Aerodynamics, 630

LEVIN, GILBERT V.
Eutrophication—The New Pollution, 433

LEVINE, HOWARD S.
Transversally Isotropic Cylinders Under Band Loads, 53

LEVINE, LEWIS
Prestressed Steel Stringers Solve Bridge Clearance Problem, 20

LEVY, LEON
Bulkhead and Excavation Bracing Failures, 71

LEYRER, MARTIN L.
See George W. Clark, Jr.

LI, CHUNG YUAN
Construction Pore Pressures in Three Earth Dams, 501
Earth Dams—Design As You Build, 77

LI, WEN-HSIUNG
Dispersion from Sources in Nonuniform Seepage Flow, 6
Experiments on Lateral Dispersion in Porous Media, 74

LIGGETT, JAMES A.
Secondary Currents in a Corner, 115

LINDHOLM, ERNEST A.
See Merlin D. Copen

LINDNER, CLEMENT P.
See Henry C. C. Weinkauff

LING, JOSEPH T.
Encourage Applied Research and Publish the Findings, 696

LINSLEY, RAY K.
The East-West Water Controversy: Both Sides Are Partly Right, 504

LISCHER, VANCE C.
Water Needs in 1999, 598

LISKA, JOSEPH A.
Wood-Structural Enigma or Engineering Reality, 156

LITLE, WILLIAM A.
Datalink: A Structural Laboratory Data System, 525
See Leon R. L. Wang

LIU, C. Y.
See R. L. Bjork

LO, KWAN YEE
Shear Strength Properties of Two Stratified Clays, 414

LOGCHER, ROBERT D.
Languages for User-Defined Member Design Processes, 466
STRUDL—A Computer System for Structural Design, 620

LOUCKS, DANIEL P.
Risk Evaluation in Sewage Treatment Plant Design, 183

LUDWIG, ALLEN C.
See John M. Dale

LUDWIG, JOHN H.
Progress in Control of Vehicle Emissions, 288

LUSCHER, ULRICH
Buckling of Soil-Surrounded Tubes, 496

LUSTGARTEN, PAUL
Suspension Bridge Spans the Orinoco, 400

LUTHIN, J. N.
Transient Solutions for Drainage of Sloping Land, 510

LYON, WALTER A.
European Practice in Water Quality Control, 227

MacGREGOR, J. G.
See Boris Bresler

MACHINIS, PETER A.
A Civil Engineer Looks at Surveying Education, 56

MACKINTOSH, CHARLES
Ductility of Building Frames under Earthquake Loads, 425

MADSEN, WAYNE A.
See David Bushnell

MAGGARD, SAMUEL P.
See John M. Hayes

MAGNUSON, NELS C.
Planning and Design of a Low-Weir Section Jetty, 23

MAH, GORDON B.
Numerical Analysis of Noncircular Cylindrical Shells, 156

MAHAN, RICHARD O.
Photo Maps for Engineering Use, 338

MAHER, FRANCIS J.
Wind Loads on Dome-Cylinder and Dome-Cone Shapes, 54
See D. M. Purdy

MAIER, GIULIO
Behavior of Elastic Plastic Trusses with Unstable Bars, 73

MANSUR, CHARLES I.
Pumping Test to Determine Permeability Ratio, 680

MARKER, ELMO
See Frank Porter

MARSAL, RAÚL J.
Large-Scale Testing of Rockfill Materials, 498
Performance of El Infiernillo Dam, 189

MARTIN, D. W.
See E. L. Albasiny

MASON, A. HUGHLETT
Vibration Frequencies of the Chesapeake Bay Bridge, 337

MAST, PAUL E.
New Method for Exact Analysis of Folded Plates, 581

MATLOCK, HUDSON
See William R. Hudson

MAUCH, HAGEN R.
Optimum Design of Columns Supported by Tension Ties, 467

MAVIS, FREDERIC T.
Airport Take-off and Landing Paths, 216
Simple Tools in a World of Computers, 161

MAZZOTTA, SALVATORE G.
See Robert D. Logcher

McCARROLL, JAMES R.
See William T. Ingram

McCULLOUGH, CHARLES A.
See Thomas E. Bailey

McDERMOTT, JOHN F.
Structural Tests on a Composite Floor System, 232

McGARRY, FREDERICK J.
See Charles L. Miller

McGEE, HENRY CLINTON
Memoir of, 749

McGILL, DAVID J.
Out-of-Plane Displacements and Stresses in a Torus, 566

McIVOR, IVOR K.
Dynamic Stability of a Shallow Cylindrical Shell, 81

McLOUGHLIN, JOHN
See Lewis Levine

McPHERSON, MURRAY B.
Distribution System Equalizing Storage Hydraulics, 207
Progress Report—ASCE Combined Sewer Separation Project, 713

MECARINI, GINO
Oceanography As an Aid to Engineering in Coastal Waters, 195

MEES, QUENTIN M.
See Fredrick C. Cooper

MEGAREFS, GEORGE J.
Method for Minimal Design of Axisymmetric Plates, 509

MEIR, EZRA
A Welded Steel Frame Skyscraper, 123

MELIN, JOHN W.
POST: Problem-Oriented Subroutine Translator, 198
See Edward L. Murphee

MEYERHOF, GEORGE G.
See K. Ueshita

MIAO, LING S.
See James A. Liggett

MIDDLEBROOKS, EDDIE JOE
See William A. Goldsmith

MILLER, CHARLES L.
Inter-American Program: Past, Present, and Future, 604

MILLIGAN, VICTOR
See Kwan Yee Lo

MIRANDA, CONSTANCIO
Finite Beams on Elastic Foundations, 666

MOBAREK, ISMAIL EL-SAYED
Directional Spectra of Laboratory Wind Waves, 681

MOCKROS, LYLE F.
See Allen T. Hjelmfelt

MONTGOMERY, C. J.
Report on Small Computers, 437

MOODY, MARTIN L.
See Ahmed E. Salama

MOORE, CHESTER A.
Civil Engineering Education That Is, 714

MORROW, CHARLES T.
Diffraction of Ocean Waves About a Breakwater, 454

MORRIS, EDWIN L.
A Modern Concept in Timber Truss Design, 319

MORTON, FRED I.
Potential Evaporation and River Basin Evaporation, 672

MOSER, THEODORE H.
Drainage by Pumped Wells in Welton-Mohawk District, 486

MOSES, PHILLIP
Red Water in South Bend, 386

MOZINGO, RALPH R.
General Method for Beams on Elastic Supports, 472

MUCKEL, DEAN C.
Phreatophytes—Water Use and Potential Water Savings, 168

MUELLER, JAMES A.
Nominal Diameter of Floc Related to Oxygen Transfer, 304

MURPHEE, EDWARD L., JR.
Environment for Problem-Oriented Languages, 159

MURPHY, THOMAS E.
See John P. Davis

MYERS, LLOYD E.
See John A. Replogle

NACE, RAYMOND L.
International Hydrological Decade Program Abroad, 187

NAIR, KESHAVAN
See Constancio Miranda

NARAIN, JAGDISH
Design of a Differential Pore Pressure Manometer and Its Time Lag Characteristics, 105

NAWY, EDWARD G.
Floating V/STOL Airport Proposed, 424

NELSON, JOHN D.
See Eben Vey

NELSON, JOHN O.
See James A. Harder

NELSON, MARK F.
See William Weaver, Jr.

NEUKIRCHNER, R. J.
See T. H. Wu

NORDIN, CARL F., JR.
Spectral Analysis of Sand Waves, 586

NORUM, W. A.
Pole Buildings Go Modern, 635

NUGENT, MAYNARD C.
A New Concept of Civil Engineering Technology, 133

OATES, ROBERT
See Harold Engstrom

O'BRIEN, M. P.
Abstracts of Papers, Tenth Conference on Coastal Engineering, 642

O'CONNOR, JOHN T.
See Mriganka M. Ghosh

O'DONNELL, TERENCE
See David R. Dawdy

ORAN, CENAP
Complementary Energy Concept for Large Deformations, 633
Complementary Energy Method for Buckling, 574

PAASWELL, ROBERT E.
Temperature Effects on Clay Soil Consolidation, 150

PAGE, W. D.
Designing with Plywood Structural Components, 636

PALMER, ALFRED H.
Compact Analysis for Tower Structures, 273

PARE, ROBERT LEE
Neoprene Elastomer Bearings—Ten Years Experience, 591

PARK, ROLLA EDWARD
Airport Accessibility and Detroit Passengers, 10

PARKIN, ALAN K.
Rockfill Structures Subject to Water Flow, 412

PARSONS, JAMES D.
Piling Difficulties in the New York Area, 707

PARSONSON, PETER S.
Estimating Urban Trip Production and Attraction, 650

PATRICK, JAMES G.
Post-Construction Behavior of Round Butte Dam, 506

PECK, CHARLES F., JR.
See Frederic T. Mavis

PECK, RALPH B.
Stability of Natural Slopes, 213

PEDERSEN, OLUF A.
Steel Bar Weights in Metric Units, 232

PELL, PETER S.
See Stephen F. Brown

PERDIKIS, HARRY S.
Hurricane-Flood Protection in the United States, 60

PERLEY, R. L.
See H. C. Cox

PERRI, JOSEPH G.
Engineering Aspects of a Nuclear Desalting Plant, 446

PERRY, PAUL C., III
Bridge Resurfaced With Epoxy Mortar, 610

PETERSEN, ALBERT T.
See M. B. Gholizadeh

PETTIBONE, HOWARD C.
Distribution of Soil Pressures on Concrete Pipe, 180

PETTITT, ROLAND A.
Cement Stabilization of Volcanic Materials, 588

PIANTA, JOHN DALE, JR.
Memoir of, 750

PIERCE, JACK W.
Plastic Pipe—A Progress Report, 307

PIKARSKY, MILTON
Underflow Sewers for Chicago, 430

PILLSBURY, ARTHUR F.
Observations on Tile Drainage Performance, 482

PINCUS, GEORGE
See Samuel J. Errera

PLUMLEE, CARL H.
Optimum Size Seaport, 157

PODOLNY, WALTER, JR.
See John F. Fleming

POPERT, WILLIAM HOPE
Memoir of, 751

PORCHER, ARTHUR G.
Siting of Manned Lunar Launch Facilities, 647

PORTER, FRANK
New Medical Building Uses Precast Concrete, 325

POSEY, C. J.
Computation of Discharge Including Over-Bank Flow, 27

POSTON, H. W.
The Battle to Save Lake Michigan, 725

POWELL, GRAHAM H.
Compact Solution of Doubly-Curved Shell Equation, 618

PROKOSCH, WALTHER
Planning the Dallas-Ft. Worth Regional Airport, 394

PRASAD, RAMANAND
See M. B. McPherson

PRYCH, EDMUND A.
New Estuarine Measurement Equipment and Techniques, 125

PURDY, D. M.
Model Studies of Wind Loads on Flat-Top Cylinders, 282

RAHN, PERRY H.
Constructing a Temporary Stream Gaging Station, 693

RAJARATNAM, NALLAMUTHU
Flow Equation for the Sluice Gate, 408

RAJU, K. G. RANGA
See R. J. Garde

RAMADAN, F. M.
See M. A. El-Dib

RAMIREZ DE ARELLANO, LUIS
See Raul J. Marsal

RASCON CHAVEZ, OCTAVIO A.
Stochastic Model to Fatigue, 347

RAYMOND, GERALD PATRICK
Consolidation of Slightly Overconsolidated Soils, 124

READ, ROBERT B.
Surveying—The Paradox of Civil Engineering, 551

REBHUN, M.
Evaluation of Hydraulic Efficiency of Sedimentation Basins, 721

REDDY, MUPPIDI N.
Analysis of Laterally-Loaded Continuous Curved Beams, 623

REE, WILLIAM O.
See Monroe A. Hartman

REED, MARSHALL F., JR.
Meeting Future Surface Transportation Needs, 675

REIDY, PETER J.
Verrazano-Narrows Bridge: Development and Financing Project, 627

REINSCHMIDT, KENNETH F.
DATALINK: A Structural Laboratory On-Line Language, 84
Iterative Design and Structural Optimization, 134

REMSON, IRWIN
Numerical Analysis of Soil-Moisture Systems, 224

RENARD, KENNETH G.
Sedimentation Research Needs in Semiarid Regions, 279

RENNE, ROLAND R.
Research Guidelines to Sound Watershed Development, 465

REPLOGLE, JOHN A.
Evaluation of Pipe Elbows as Flow Meters, 373
Flow Measurements with Fluorescent Tracers, 28

RESENDIZ, D.
See T. H. Wu

REYNOLDS, ALAN J.
See Shiu Wai Law

REYNOLDS, JOHN Z.
Water Quality in Pumped Storage Reservoirs, 650

RHODY, FRANCIS J.
Runway Traction, 715

RHUDE, MAURICE J.
Structural Timber Framing in Forest Products Laboratory, 376

RICE, CHARLES E.
Effect of Pipe Boundary on Hood Inlet Performance, 358

RIDHA, R. A.
Minimum Cost Design of Frames, 507

RILE, THOMAS S.
See John F. Fleming

ROBECK, GORDON G.
See William H. Irwin
See James M. Symons

ROBESON, FRED A.
Rockfill Design—Carters Dam, 25

ROBINSON, GEORGE S.
Behavior of Concrete in Biaxial Compression, 393

RODRIQUEZ-AGRAIT, L.
See Leon R. L. Wang

ROEFS, THEODORE G.
See Warren A. Hall

ROESSET, JOSE M.
See Gerald M. Sturman

ROGERSON, W. M.
Aluminum Orthotropic Bridge Deck in Pittsburgh, 621

ROLLINS, ANDREW PEACH
Memoir of, 752

ROSENBLUETH, EMILIO
See Jorge I. Bustamante

ROSSANO, AUGUST T.
See Richard E. Johnson

ROSSELLI, ALBERT T.
Planning the Flatlands Urban Industrial Park, 563

ROSSOW, EDWIN C.
Eccentrically Loaded Steel Columns with Initial Curvature, 438
See Joseph Antebi

ROUSE, HUNTER
Fluctuation of Pressure in Conduit Expansions, 191

RUBINSTEIN, MOSHE F.
Building Design Using Linear Programming, 178

RUSSELL, ROY R.
Bending of Hyperbolic Paraboloid Structures, 489

RUSSELL, THOMAS L.
Ocean Wave Force Instrumentation, 491

SAAD, KAMAL F.
Double Slope Method for Pumping Test Analysis, 688

SAAFAN, SAAFAN A.
Theoretical Analysis of Suspension Bridges, 110

SALAMA, AHMED E.
Analysis of Beams and Plates for Ponding Loads, 514
See Julius P. Wong

SALMON, MARTIN A.
Large Plastic Deformation of Pressurized Cylinders, 670

SALTER, WINFIELD O.
Two Computer Approaches to Subway Design, 205

SANKS, ROBERT L.
Partial Demineralization of Brackish Waters, 131

SATO, Y.
See Masanobu Shinozuka

SAVRIEV, K. S.
Seismic Resistance of Prestressed Concrete Structures, 385

SAWYER, DONALD A.
Ponding of Rainwater on Flexible Roof Systems, 542

SAX, KENNETH W.
Water Resources Site Preservation on Federal Lands, 372

SAXTON, KEITH E.
Antecedent Retention Indexes Predict Soil Moisture, 607

SCHILLING, ADOLF A.
Rock Mechanics Engineering for Boundary Project, 10

SCHILLING, CHARLES G.
Web Crippling Tests on Hybrid Beams, 237

SCHLEUSENER, RICHARD A.
Evolution of Uses of Cloud-Seeding Technology, 476

SCHMERTMANN, JOHN H.
Static Penetrometers for Soil Exploration, 326

SCHOETTLE, VOLKMAR
See Thomas L. Russell

SCHOOF, RUSSELL R.
See Monroe A. Hartman

SCOTHON, EARL
New York State's Unique Canal System, 330

SCOTT, VERNE H.
See George J. Kriz
See Gert Aron

SEBASTIAN, FRANK P.
San Francisco's Solid Wastes Crisis, 571

SEDLACEK, MELVIN L.
Tulsa Exposition Building—Hanging Cantilevers Provide Cover Framing, 222

SEED, H. BOLTON
Liquefaction of Saturated Sands During Cyclic Loading, 519
Slope Stability During Earthquakes, 610
See James M. Duncan
See Kenneth L. Lee

SEERY, JAMES D.
Construction of Morrow Point Power Plant and Dam, 3

SEIGEL, L. G.
Water-Filled Tubular Steel Columns—Fire Protection Without Coating, 639

SEMBLER, EUGENE L.
Eight-Berth Marine Terminal in Deep Bay Mud, 523

SHAH, INDRAVADAN K.
See Joseph Antebi

SHAH, JAYANT M.
Ill-Conditioned Stiffness Matrices, 69
See Joseph Antebi

SHAMIR, URI Y.
Dispersion in Layered Porous Media, 515

SHARP, MAURICE L.
Longitudinal Stiffeners for Compression Members, 445

SHERBOURNE, A. N.
Buckling of Cylindrical Shells under Axial Compression, 584
See R. M. Korol

SHIELDS, CLYDE E.
See Robert B. Jansen

SHINOZUKA, MASANOBU
Simulation of Nonstationary Random Process, 513

SHUKRY, AHMED
See Kamel F. Saad

SICULAR, GEORGE M.
Civil Engineers—Professionals or Technicians?, 708

SIESS, CHESTER P.
See Joseph P. Colaco
See Nat W. Krahl
See Ned H. Burns

SIMON, CONRAD
See William T. Ingram

SIMS, FLOURNOY WILLIAM
Memoir of, 753

SINGAMSETTI, SURYA RAO
Diffusion of Sediment in a Submerged Jet, 228

SINGH, BHAWANI
See Jagdish Narain

SINGH, RAMESHWAR
Solution of a Diffusion Equation, 490

SKUTLEY, KALE
Precision Alignment Systems, 616

SMITH, LAWRENCE L.
Programming Structural Integrity Maintenance, 560

SMOLTCZYK, HANS U.
Stress Computation in Soil Media, 280

SNELL, ROBERT R.
See Dallas R. Koerner

SNYDER, CHARLES E.
See Ira M. Tillotson

SORENSEN, ROBERT M.
Investigation of Ship-Generated Waves, 550

SOWERS, GEORGE B.
Bulkhead and Excavation Bracing Failures, 71

SOWERS, GEORGE F.
See George B. Sowers

SPARROW, ROBERT W.
Behavior of a Soil Mass Under Dynamic Loading, 32

SRIDHARAN, K.
See Nagar S. Lakshmana Rao

STAFF, CHARLES E.
Seepage Prevention with Impermeable Membranes, 277

STAFFORD, PAUL H.
Economics of Parking Structures at Airports, 320
Forecasts for Philadelphia International Airport, 391

STEAD, KENNETH A.
See Chuan C. Feng

STEIN, DONALD E.
Highway Construction in Alaska, 587

STEPHENSON, DAVID
Water-Hammer Charts Including Fluid Friction, 215

STERGIOU, PAUL
Launcher Erects Post-Tensioned Girders in Boliva, 383

STERNER, J. A.
Madison Square Garden—Fabrication and Erection of Cable-Supported Roof, 534

STEVENSON, H. F.
See R. A. Williamson

STEVENSON, JOHN ALEXANDER
See Edgar Burke Wilson

STIFFLER, L. E.
An Organization for Construction Education, 370

STOKES, RALPH C.
See James R. Ayers

STONE, JOHN F.
Ignition Noise in Neutron Moisture Gages, 480

STRANDBERG, HERBERT V.
Design and Construction Features: Boundary Project, 660

STREETER, VICTOR L.
Valve Stroking for Complex Piping Systems, 98

STUDZINSKI, S. H.
Shallow Prestressed Girders for Fresno Underpass, 577

STURMAN, GERALD M.
Computer-Aided Bridge Design, 553
See Robert D. Logcher

SWICK, EDGAR H.
Land Survey Implications of Right-of Way Surveys, 95

SYLVESTER, ROBERT O.
See Richard E. Johnson

SYMONS, JAMES M.
Impoundment Water Quality Changes Caused by Mixing, 79
See William H. Irwin

SZABO, BARNA A.
See George C. Lee

TABITA, ANGELO
See Otis M. Jernigan

TALBOT, DOUGLAS W.
Role of the City Engineer in Urban Planning, 654

TATLOW, RICHARD H., III
ASCE's Future Is Our Business, 727
The Critical Path of ASCE (Inaugural Address), 583

TAYLOR, RICHARD E.
Computers and the Design of The World Trade Center, 103

TAYLOR, ROBERT L.
Darcy Flow Solutions with a Free Surface, 89

TEZCAN, SEMIIH S.
Computer Analysis of Plane and Space Structures, 667

THACKSTON, EDWARD L.
Least Squares Estimation of Mixing Coefficients, 494

THOMPSON, ARNOLD W.
Facility Planning for Philadelphia Airport, 461

THOMPSON, ORVILLE B.
See Mark J. Hammer

THON, J. GEORGE
Power Generation—Its Status and Outlook, 541

THORNTON, CHARLES H.
Three-Dimensional Suspension Structures, 92

TIBSHIRANI, SAMI
Waterproofing a Tunnel Under a Canal, 406

TIEMANN, ARTHUR E.
Bayesian Approach to Forecasting Loss of Airline Service, 641

TILLOTSON, IRA M.
Current Problems in Property Location, 648

TINNEY, E. ROY
See Clifton W. Johnson

TODD, DAVID K.
Economics of Ground-Water Recharge, 695

TORIDIS, TEOKTISTOS G.
Inelastic Response of Beams to Moving Loads, 31

TORY, A. COLIN
See Robert W. Sparrow

TROLLOPE, DAVID H.
See Alan K. Parkin

TSAI, N. C.
Beam on Tensionless Foundation, 652

TSANG, HSIEN-SAN
Analysis of Vierendeel Truss with Inclined Chords, 463

TULLIS, J. PAUL
See Maurice L. Albertson

TURNER, N. F.
Negotiating with ASCE Manual 45, 398

TUTHILL, LEWIS H.
How the California Water Project Endeavors to Get Uniformly Excellent Concrete, 421

UESHITA, K.
Deflection of Multilayer Soil Systems, 493

ULATE, CARLOS A.
Mud Floods Related to the Irazu Volcano Eruptions, 107

VAN DER PAS, P. W.
See R. A. Williamson

VEY, EBEN
Engineering Properties of Simulated Lunar Soils, 487

VINSON, JACK R.
Edge Load Solutions for Conical Shells, 714

VOELKEL, KARL G.
See James A. Mueller

von HOERNER, SEBASTIAN
Homologous Deformations of Tiltable Telescopes, 567

VREELAND, ROBERT P.
Mapping the West: 1789–1900, 139

WALKER, A. C.
Local Instability in Plates and Channel Struts, 669

WALKER, FRED C.
Willard Dam—Behavior of a Compressible Foundation, 220

WALSH, ROBERT J.
Restoring Salt-Damaged Highway Bridges, 429

WANG, CHU-KIA
Stability of Rigid Frames with Nonuniform Members, 456

WANG, LEON R. L.
Effect of Boundary Conditions on Shell Buckling, 16

WATSON, ARTHUR R.
Challenges to Registration of Engineers, 579

WATSON, KEITH K.
Experimental and Numerical Study of Column Drainage, 167

WEAVER, FRANK J.
See Robert I. Kaufman

WEAVER, WILLIAM, JR.
Three-Dimensional Analysis of Tier Buildings, 169

WEINKAUFF, HENRY, C. C.
Hydro Project Formulation: Results in the Southeast, 677

WEN, ROBERT K.
See Teoktistos G. Toridis

WENK, EDWARD, JR.
Engineering for Marine Exploration and Development, 495

WESTINE, PETER S.
Replica Modeling in Soil Dynamics, 518

WESTMANN, RUSSELL A.
Viscoelastic Layered System Subjected to Moving Loads, 120
See N. C. Tsai

WHELAN, DONALD E.
See Heggie N. Holtan

WHITE, RICHARD N.
Framing Connections for Square Structural Tubing, 415

WHITMAN, NATHAN DAVIS, JR.
Memoir of, 754

WIBBENS, RUSSELL P.
AITC Timber Construction Manual, 505

WILLIAMS, WAYNE W.
See Richard L. Handy

WILLIAMSON, ROBERT A.
Computer Design of a Tower and Cable System, 217

WILSON, EDGAR BURKE
Sidestream Intakes for Hydro Power in Scotland, 522

WILSON, KENNETH C.
Bed-Load Transport at High Shear Stress, 410

WINTER, GEORGE
See Kenneth W. Karren

WISELY, WILLIAM H.
Administration of Ethical Standards, 357
Fundamentals of Water Pollution Control, 556
The Many Facets of Community Planning, 5
The Spirit of Service, 719
What Does a Member Get Out of ASCE?, 436

WONG, JULIUS P.
Stability of Multilayer Sandwich Plates, 40

WOOD, DON J.
Unsteady Flow of Solid-Liquid Suspension, 143
Waterhammer Analysis by Analog Computers, 235

WOOD, I. R.
Horizontal Two-Dimensional Density Current, 442

WOOD, LYMAN W.
Wood—A Reliable Engineering Material, 96

WRIGHT, KENNETH R.
Harvard Gulch Flood Control Project, 45

WRIGHT, PAUL M.
Worlds of Two Giants, 21

WRIGHT, R. N.
See R. A. Ridha

WU, T. H.
Analysis of Consolidation by Rate Process Theory, 580

WUNDERLICH, WILLIAM E.
See Otis M. Jernigan

YOAKUM, DELMAR D.
Winter Construction of Earthwork and Foundations, 377

YOUNG, J. WILLIAM, JR.
Synthesis of a Space Truss Based on Dynamic Criteria, 129

YU, YUN-SHENG
See David W. Appel

ZAR, MAX
See Charles F. Beck